

Order No. MAC0212094C3

Service Manual

Room Air Conditioner

CS-PC9CKN CU-PC9CKN5 / CS-SC9CKN CU-PC9CKN5 / CS-PC12CKN CU-PC12CKN5 / CS-SC12CKN CU-PC12CKN5



© 2002 Matsushita Industrial Corp. Sdn. Bhd. (11969-T). All rights reserved. Unauthorized copying and distribution is a violation of law.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

National

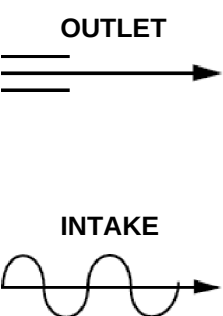
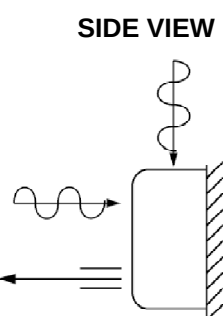
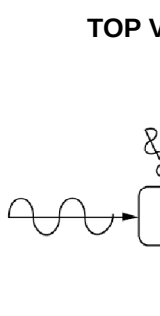
1. Features

- High Efficiency
- Compact Design
- Comfort Environment
- Air filter with function to reduce dust and smoke

- Wider range of horizontal discharge air
- Auto Restart
- Random auto restart after power failure for safety restart operation
- Removable and Washable Front Panel
- Remote Control Self-illuminating Button
- For CS-PC9CKN & CS-PC12CKN only
- Quality Improvement
- Gas leakage protection
- Prevent compressor reverse cycle
- 2-stage OLP to protect compressor
- Long Installation Piping
- CS-PC9CKN & CS-SC9CKN, long piping up to 10 meter
- CS-PC12CKN & CS-SC12CKN, long piping up to 15 meter

2. Functions

3. Product Specifications

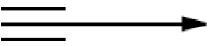
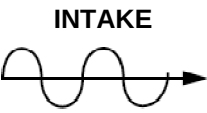
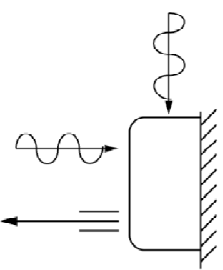
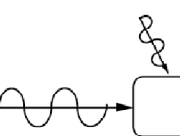
		Unit	CS-PC9CKN CS-SC9CKN	CU-PC9CKN CU-SC9CKN
Power Source		Phase, Voltage, Cycle	Single, 220 - 240, 50 Hz	
Cooling Capacity		kW (BTU/h)	2.65 - 2.70 (9,040 - 9,200)	
Moisture Removal		l/h (Pint/h)	1.6 (3.4)	
Airflow Method				
Air Volume	Indoor Air (Lo)	m3/min (cfm)	6.2 (220) - 6.2 (220)	—
	Indoor Air (Me)	m3/min (cfm)	7.2 (260) - 7.2 (260)	—
	Indoor Air (Hi)	m3/min (cfm)	8.4 (300) - 8.4 (300)	30.9 (1,090) - 30.9 (1,090)

		Unit	CS-PC9CKN CS-SC9CKN	CU-PC9CKN CU-SC9CKN
Noise Level		dB (A)	High 37 - 37, Low 26 - 26	High 47 - 47, Low 26 - 26
		Power level dB	High 50 - 50	High 60 - 60
Electrical Data	Input Power	W	800 - 840	
	Running Current	A	3.8 - 3.7	
	EER	W/W (BTU/hW)	3.31 - 3.21 (11.3 - 11.0)	
	Starting Current	A	17.3	
Piping Connection Port (Flare piping)		inch inch	G ; Half Union 3/8" L ; Half Union 1/4"	G ; 3-way v L ; 2-way v
Pipe Size (Flare piping)		inch inch	G ; (gas side) 3/8" L ; (liquid side) 1/4"	G ; (gas si L ; (liquid s
Drain	Inner diameter	mm	12	—
Hose	Length	mm	650	—
Power Cord	Length	m	1.9	—
	Number of core-wire		3 (1.5 mm ²)	—
Dimensions	Height	inch (mm)	10 - 13/16 (275)	21 - 1/4
	Width	inch (mm)	31 - 15/32 (799)	30 - 23/32
	Depth	inch (mm)	8 - 9/32 (210)	11 - 3/8
Net Weight		lb (kg)	20 (9.0)	64 (29)
Compressor	Type		—	Rotary (1 c rolling pis
	Motor	Type	—	Induction (
	Rated	Output	W	720
Air Circulation	Type		Cross-flow Fan	Propelle
	Material		AS + Glass Fiber 20%	PP Re
	Motor	Type	Induction (4-poles)	Induction (
	Input		W	65.0 -
	Rate	Output	W	31
	Fan Speed	Low	rpm	—
		Medium	rpm	—
		High	rpm	815 -
Heat Exchanger	Description		Evaporator	Conde
	Tube material		Copper	Copp
	Fin material		Aluminium (Pre Coat)	Alumir
	Fin Type		Slit Fin	Louve
	Row / Stage		(Plate fin configuration, forced di 2 × 10	1 × 2
	FPI		18	17
	Size (W × H × L)		610 × 207 × 25.4	12.7 × 50.
Refrigerant Control Device			—	Capillary
Refrigeration Oil		(cm ³)	—	SUNISO 40
Refrigerant (R-22)		g (oz)	—	565 (1
Thermostat			Electronic Control	—

		Unit	CS-PC9CKN CS-SC9CKN	CU-PC9CKN
Protection Device			—	2 Stage Overcurrent Protection
Capillary Tube	Length	mm	—	841
	Flow Rate	l/min	—	9.9
	Inner Diameter	mm	—	1.5
Air Filter	Material Style		P.P. Honeycomb	—
Capacity Control			Capillary Tube	
Compressor Capacitor		μ F, VAC	—	30 μ F, 450VAC
Fan Motor Capacitor		μ F, VAC	1.5 μ F, 400VAC	2.0 μ F, 450VAC

Note:

- Specifications are subject to change without notice for further improvement.

		Unit	CS-PC12CKN CS-SC12CKN	CU-PC12CKN
Power Source		Phase, Voltage, Cycle	Single, 220 - 240, 50 Hz	
Cooling Capacity		kW (BTU/h)	3.49 - 3.54 (11,900 - 12,070)	
Moisture Removal		l/h (Pint/h)	2.1 (4.4)	
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 
Air Volume	Indoor Air (Lo)	m ³ /min (cfm)	7.6 (270) - 7.6 (270)	—
	Indoor Air (Me)	m ³ /min (cfm)	8.7 (310) - 8.7 (310)	—
	Indoor Air (Hi)	m ³ /min (cfm)	10.2 (360) - 10.2 (360)	30.9 (1,090) - 32.0 (1,130)

		Unit	CS-PC12CKN CS-SC12CKN	CU-PC12CKN	
Noise Level		dB (A)	High 40 - 40, Low 29 - 29	High 49 -	
		Power level dB	High 53 - 53	High 63 -	
Electrical Data	Input Power	kW	1.17 - 1.21		
	Running Current	A	5.6 - 5.3		
	EER	W/W (BTU/hW)	2.98 - 2.93 (10.2 - 10.0)		
	Starting Current	A	16.9		
Piping Connection Port (Flare piping)		inch inch	G ; Half Union 1/2” L ; Half Union 1/4”	G ; 3-way val L ; 2-way val	
Pipe Size (Flare piping)		inch inch	G ; (gas side) 1/2” L ; (liquid side) 1/4”	G ; (gas side) L ; (liquid side)	
Drain Hose	Inner diameter	mm	12	—	
	Length	mm	650	—	
Power Cord	Length	m	1.9	—	
	Number of core-wire		3 (1.5 mm2)	—	
Dimensions	Height	inch (mm)	10 - 13/16 (275)	21 - 1/4 (53)	
	Width	inch (mm)	31 - 15/32 (799)	30 - 23/32 (762)	
	Depth	inch (mm)	8 - 9/32 (210)	11 - 3/8 (286)	
Net Weight		lb (kg)	20 (9.0)	71 (32.1)	
Compressor	Type		—	Rotary (1 cylinder, rolling piston)	
	Motor	Type	—	Induction (2-poles)	
	Rated	Output	kW	—	0.93
Air Circulation	Type		Cross-flow Fan	Propeller	
	Material		AS + Glass Fiber 20%	PP Resin	
	Motor	Type	Induction (4-poles)	Induction (6-poles)	
	Input		W	44.8 - 53.5	
	Rate	Output	W	15	
	Fan Speed	Low	rpm	920 - 920	—
		Medium	rpm	1,050 - 1,050	—
High		rpm	1,230 - 1,230	815 - 815	
Heat Exchanger	Description		Evaporator	Condenser	
	Tube material		Copper	Copper	
	Fin material		Aluminium (Pre Coat)	Aluminium	
	Fin Type		Slit Fin	Louver Fin	
	Row / Stage		(Plate fin configuration, forced draught)		
			2 × 15	1 × 24	
	FPI		19	17	
Size (W × H × L)		mm	610 × 315 × 25.4	12.7 × 504	
Refrigerant Control Device			—	Capillary Tube	
Refrigeration Oil		(cm3)	—	SUNISO 4GS	
Refrigerant (R-22)		g (oz)	—	620 (21.5)	
Thermostat			Electronic Control	—	

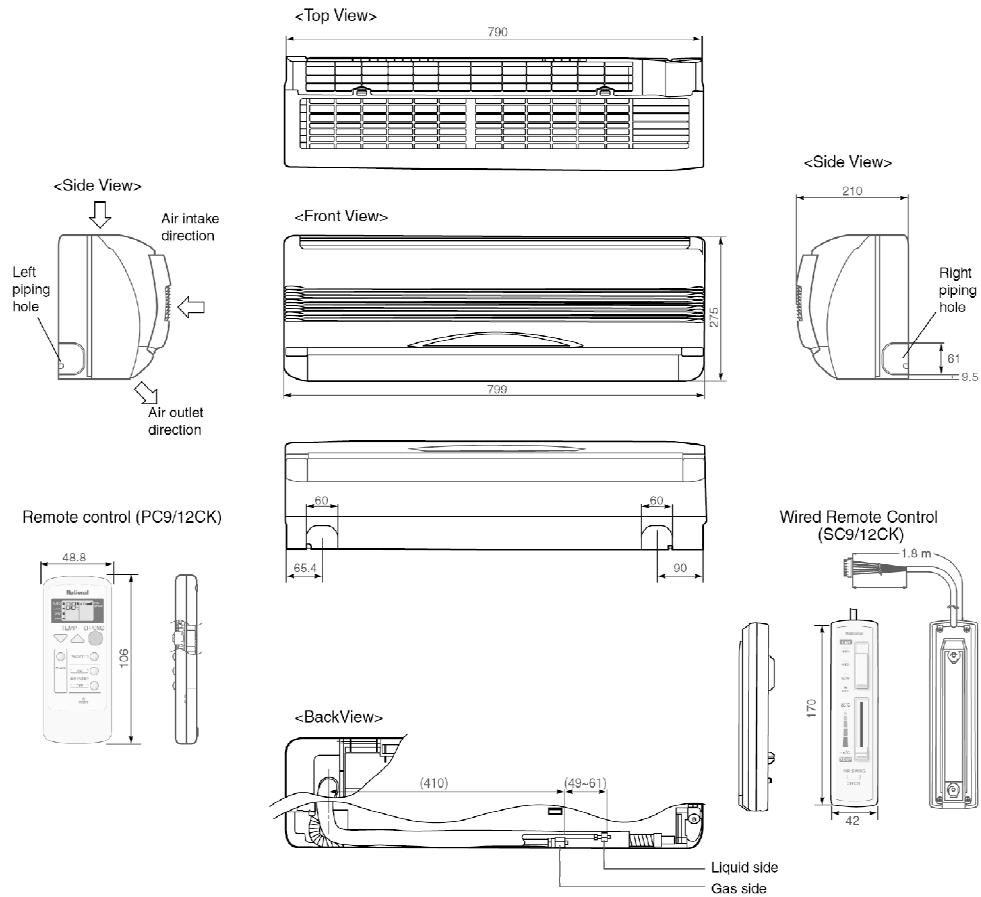
		Unit	CS-PC12CKN CS-SC12CKN	CU-PC12C
Protection Device			—	2 Stage Over Protect
Capillary Tube	Length	mm		605
	Flow Rate	l/min	—	15.7
	Inner Diameter	mm	—	1.7
Air Filter	Material Style		P.P. Honeycomb	—
Capacity Control			Capillary Tube	
Compressor Capacitor		μ F, VAC	—	30 μ F, 40
Fan Motor Capacitor		μ F, VAC	1.5 μ F, 400VAC	2.0 μ F, 44

Note:

- Specifications are subject to change without notice for further improvement.

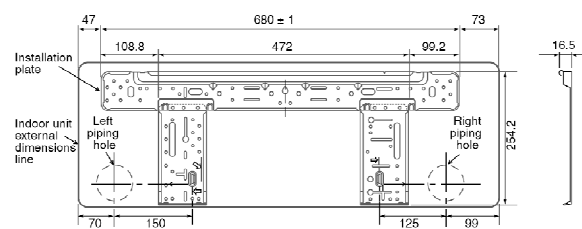
4. Dimensions

CS-PC9CKN, CS-PC12CKN, CS-SC9CKN, CS-SC12CKN (Indoor Unit)

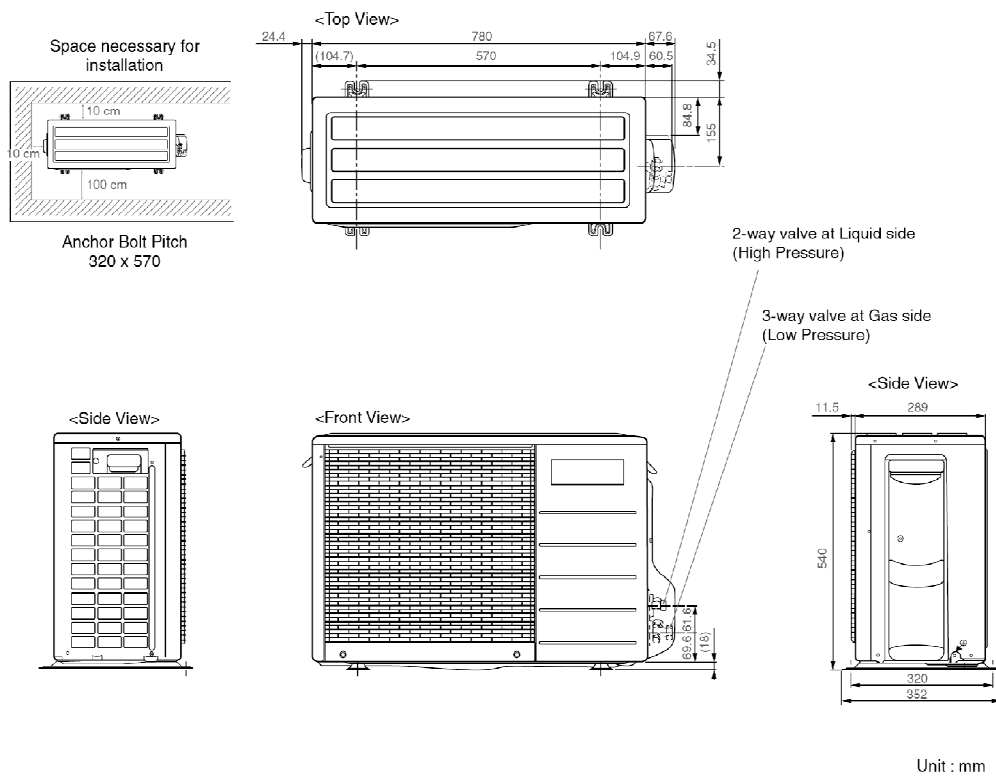


Unit : mm

Relative position between the indoor unit and the installation plate <Front View>

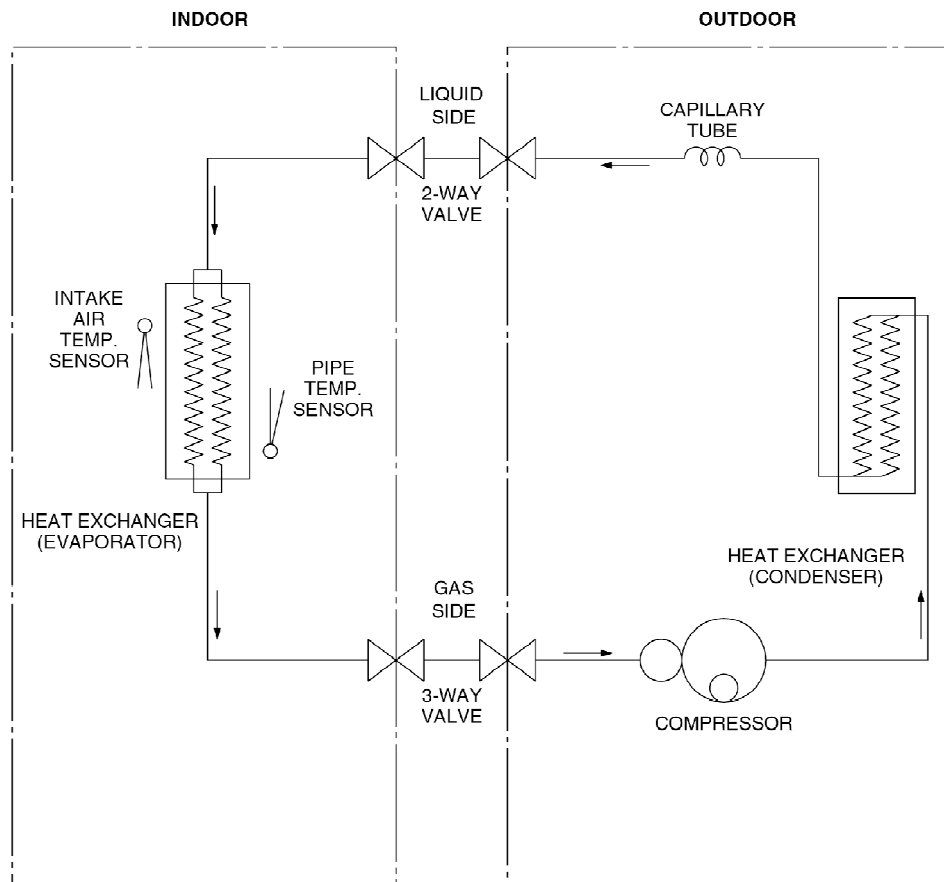


CU-PC9CKN5, CU-PC12CKN5 (Outdoor Unit)



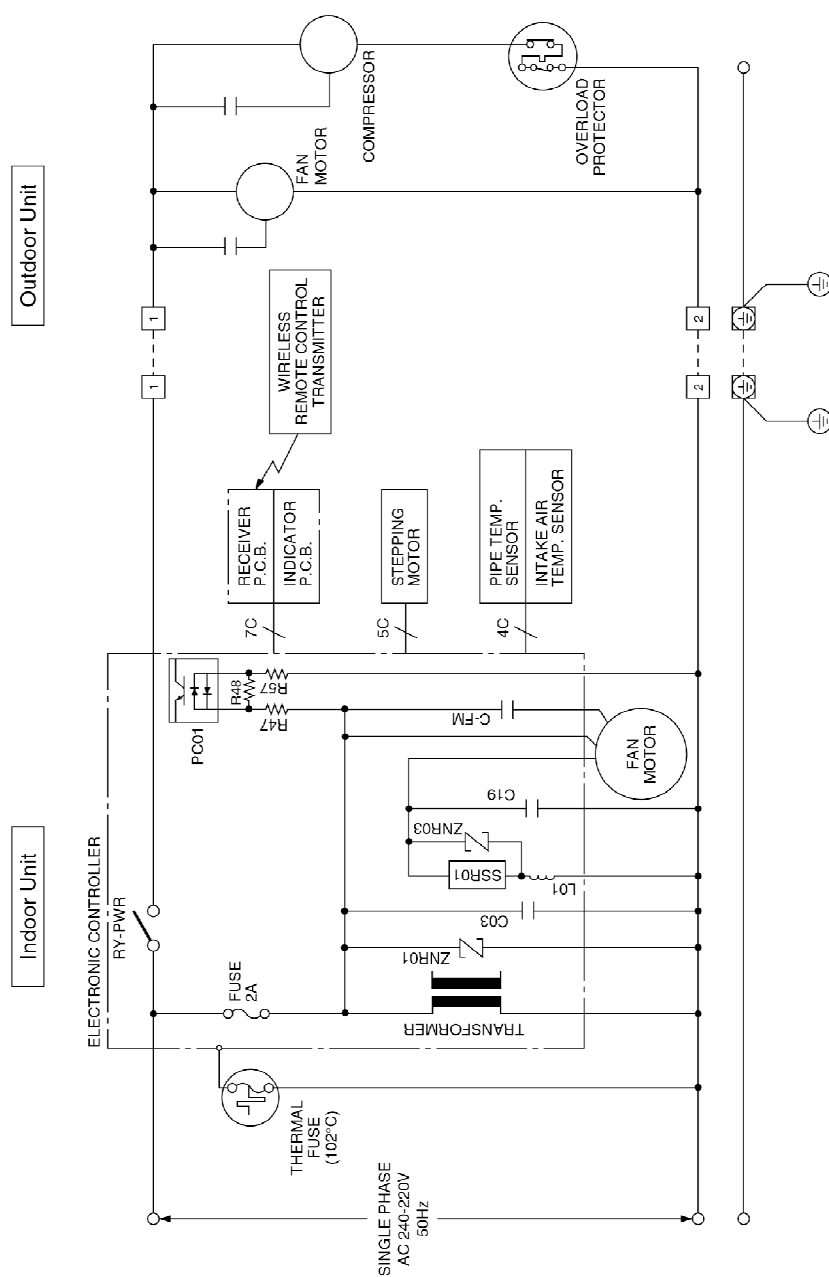
5. Refrigeration Cycle Diagram

CS-PC9CKN / CU-PC9CKN5
CS-SC9CKN / CU-PC9CKN5
CS-PC12CKN / CU-PC12CKN5
CS-SC12CKN / CU-PC12CKN5



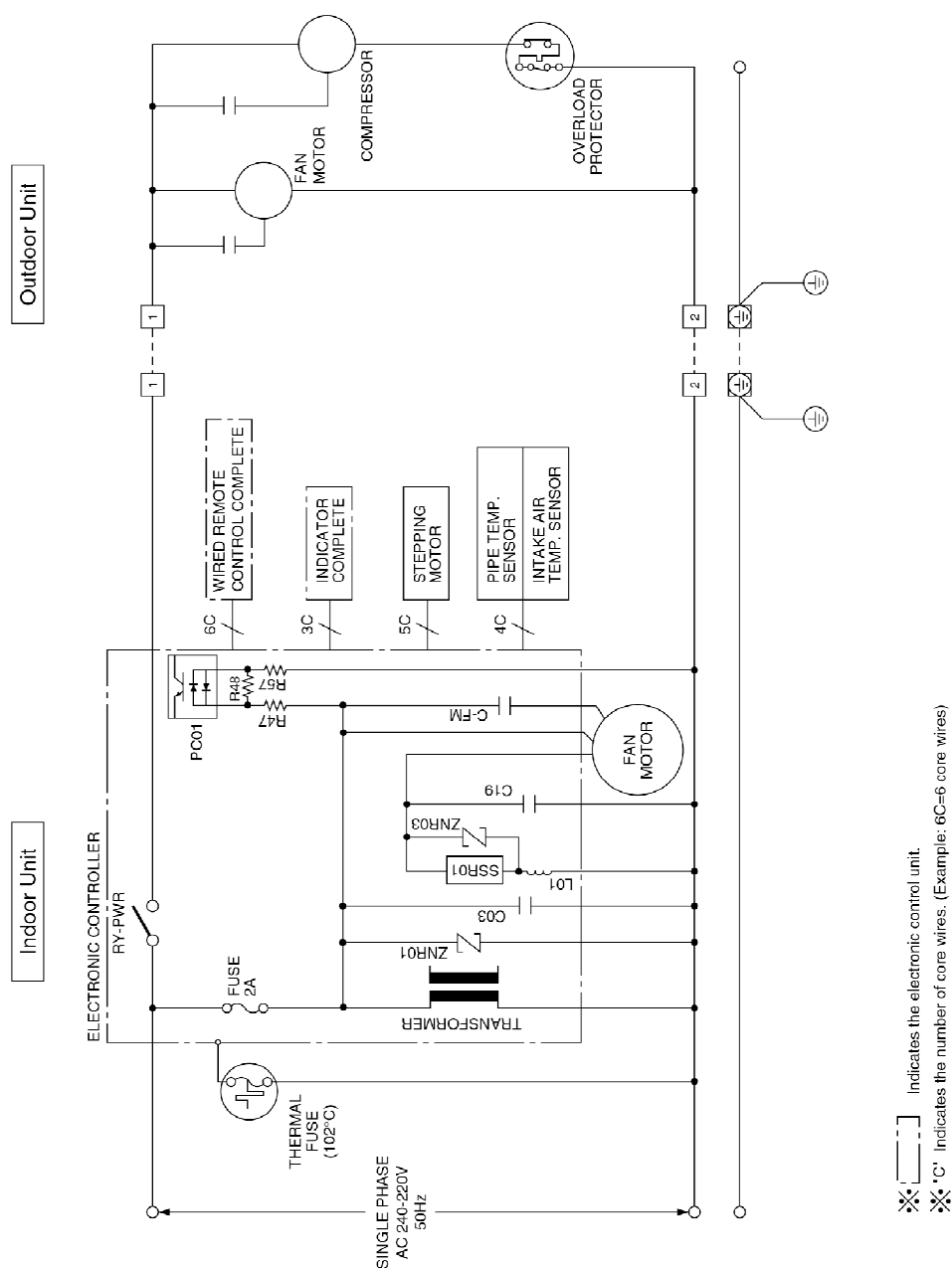
6. Block Diagram

CS-PC9CKN / CU-PC9CKN5
CS-PC12CKN / CU-PC12CKN5



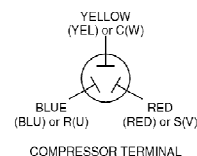
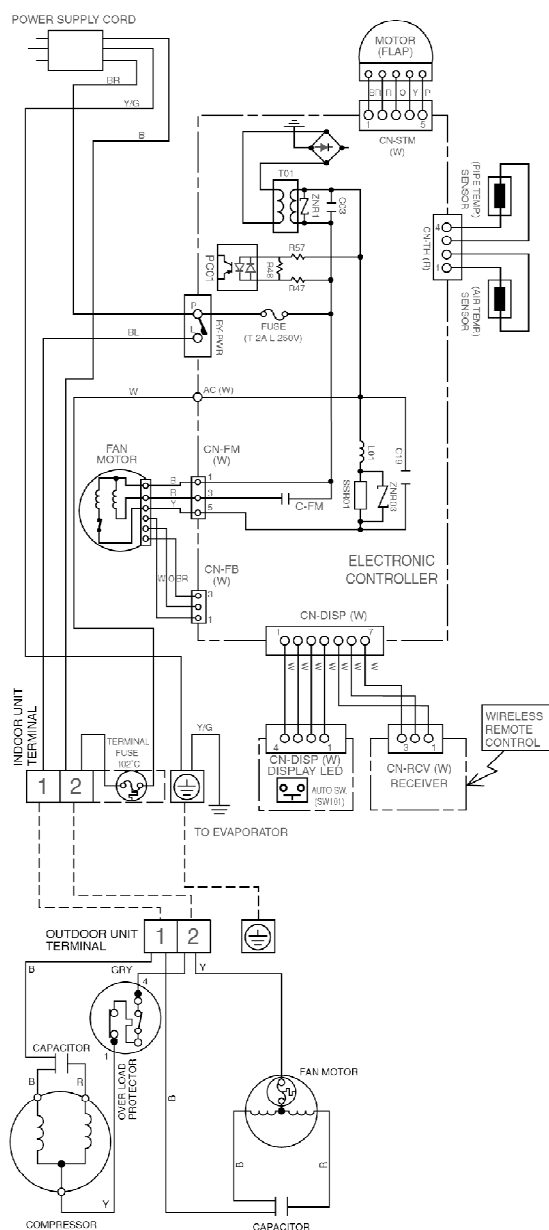
⌘ Indicates the electronic control unit.
⌘*C* Indicates the number of core wires. (Example: 6C=6 core wires)

CS-SC9CKN / CU-PC9CKN5
CS-SC12CKN / CU-PC12CKN5



7. Wiring Diagram

**CS-PC9CKN / CU-PC9CKN5
CS-PC12CKN / CU-PC12CKN5**



Remarks:

B : BLUE
BR : BROWN
BL : BLACK
GRY : GRAY
O : ORANGE
P : PINK
R : RED
W : WHITE
Y/G : YELLOW / GREEN

Resistance of Indoor Fan Motor Windings

CONNECTION	CWA921060
BLUE - YELLOW	371.0 Ω
YELLOW - RED	386.6 Ω

Note: Resistance at 20°C of ambient temperature.

Resistance of Outdoor Fan Motor Windings

MODEL	CU-PC9CK CU-PC12CK
CONNECTION	CWA951221
BLUE - YELLOW	209.6 Ω
YELLOW - RED	226.2 Ω

Note: Resistance at 26°C of ambient temperature.

Resistance of Compressor Windings

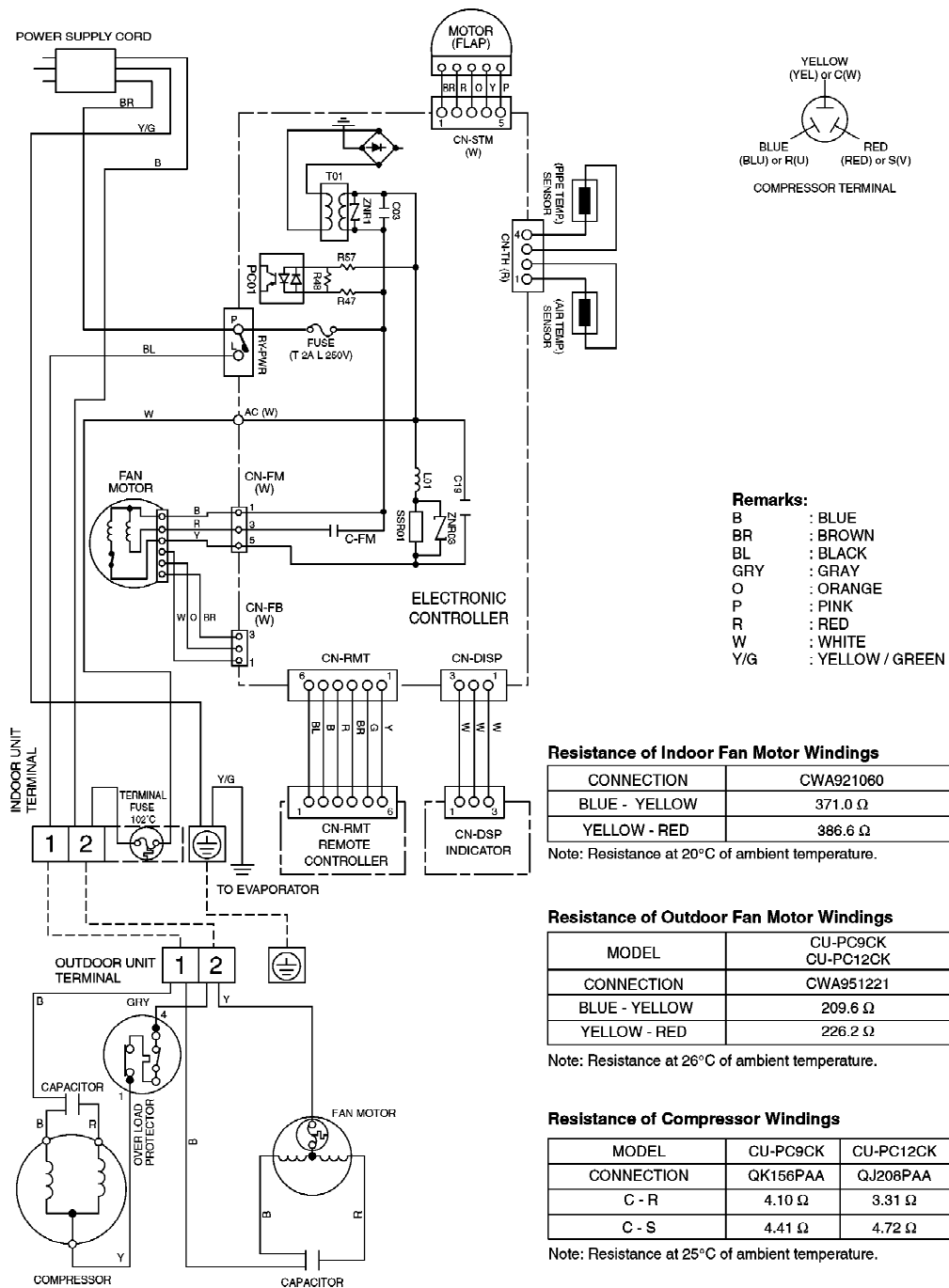
MODEL	CU-PC12CK
CONNECTION	QJ208PAA
C - R (Main)	3.31 Ω
C - S (Sub)	4.72 Ω

Note: Resistance at 25°C/20°C of ambient temperature.

MODEL	CU-PC9CK
CONNECTION	QK156PAA
C - R	4.10 Ω
C - S	4.41 Ω

Note: Resistance at 25°C of ambient temperature.

**CS-SC9CKN / CU-PC9CKN5
CS-SC12CKN / CU-PC12CKN5**



8. Operation Details (CS-PC9CKN & CS-PC12CKN)

8.1. Cooling Mode Operation

Cooling in operation according to Remote Control setting.

Time Delay Safety Control (3 minutes)

- When the compressor is stopped by Remote Control, it restarts after 3 minutes when the Remote Control is turned ON.
- When the setting temperature is reached during cooling operation, the compressor stops and it will not start for 3 minutes.

7 minutes Time Save Control

- The compressor will start automatically if it has stopped for 7 minutes even if the room temperature is between the compressor ON temperature and OFF temperature.

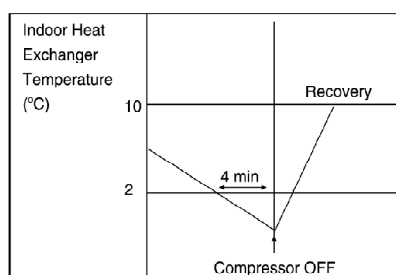
Starting Current Control

- When the compressor outdoor fan motor and indoor fan motor are simultaneously started, the indoor fan motor will operate 1.6 second later.

Anti-Freezing Control

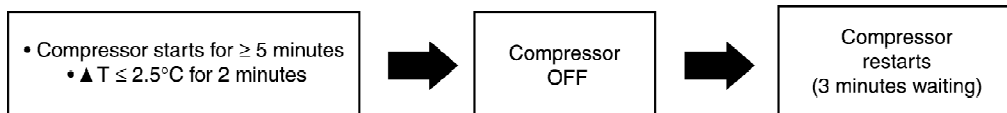
- If the temperature of the indoor heat exchanger falls continuously below 2°C for 4 minutes or more, the compressor turns off to protect the indoor heat exchanger from freezing. The fan speed setting remains the same.
- Compressor will restart again when the indoor heat exchanger temperature rises to 10°C (Recovery).

✕ 3 minutes waiting of Time Delay Safety Control is valid for Cooling Operation.



Compressor Reverse Rotation Protection Control

- If the compressor is operating continuously for 5 minutes or longer and the temperature difference between intake air and indoor heat exchanger is 2.5°C or less for 2 minutes, compressor will stop and restart automatically. / (Time Delay Safety Control is valid)

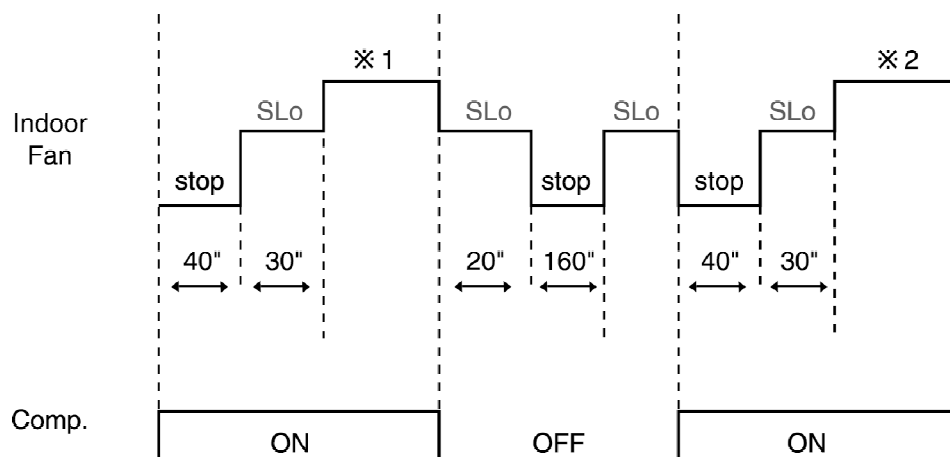


▲ T = Intake air temperature - Indoor heat exchanger temperature /
This is to protect reverse rotation of the compressor when there is a instantaneous power failure.

Automatic Fan Speed Mode

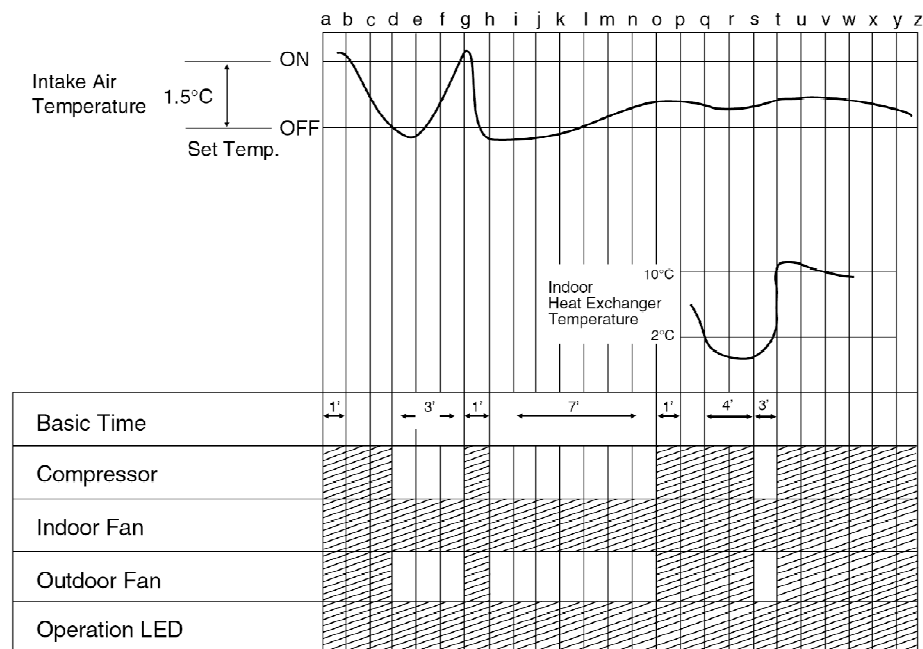
When Automatic Fan Speed is selected at Remote Control during cooling operation.

- Fan speed rotates in the range of Hi to Me.



- ※ 1 Fan Speed is Hi until the compressor stops (when the room temperature reaches setting temperature).
- ※ 2 Fan Speed is Me after the compressor restarts.

Cooling Operation Time Diagram



<Description of operation>

d – g : Time Delay Safety Control (waiting for 3 minutes)

g – h : 60 sec. Forced Operation

h – o : 7 min. Time Save Control

q – u : Anti Freezing Control

 Operation

 Stop

8.2. Soft Dry Mode Operation

- The unit starts cooling operation until the room temperature reaches the setting temperature set on the Remote Control, and then Soft Dry operation will start.
- During Soft Dry operation, the Indoor Fan will operate at Lo- speed.
- The operation will be switched on and off for up to 10 minutes “ON” and 6 minutes “OFF”. Once Soft Dry operation is turned off, it stops for 6 minutes.

Time Delay Safety Control

- Once the compressor stops, it will not start for 3 minutes during Cooling operation.

Starting Current Control

- Same as Starting Current Control for Cooling Mode operation.

Anti-Freezing Control

- Same as Anti-Freezing Control for Cooling Mode operation. (For Soft Dry region, 6 minutes waiting is valid during compressor stops.)

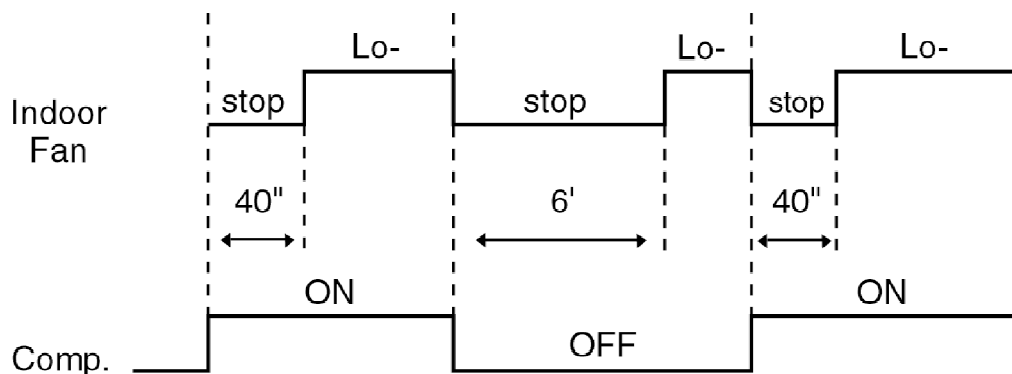
Compressor Reverse Rotation Protection Control

- Same as Compressor Reverse Rotation Protection Control for Cooling Mode Operation. (For Soft Dry region, 6 minutes waiting is valid during compressor stops.)

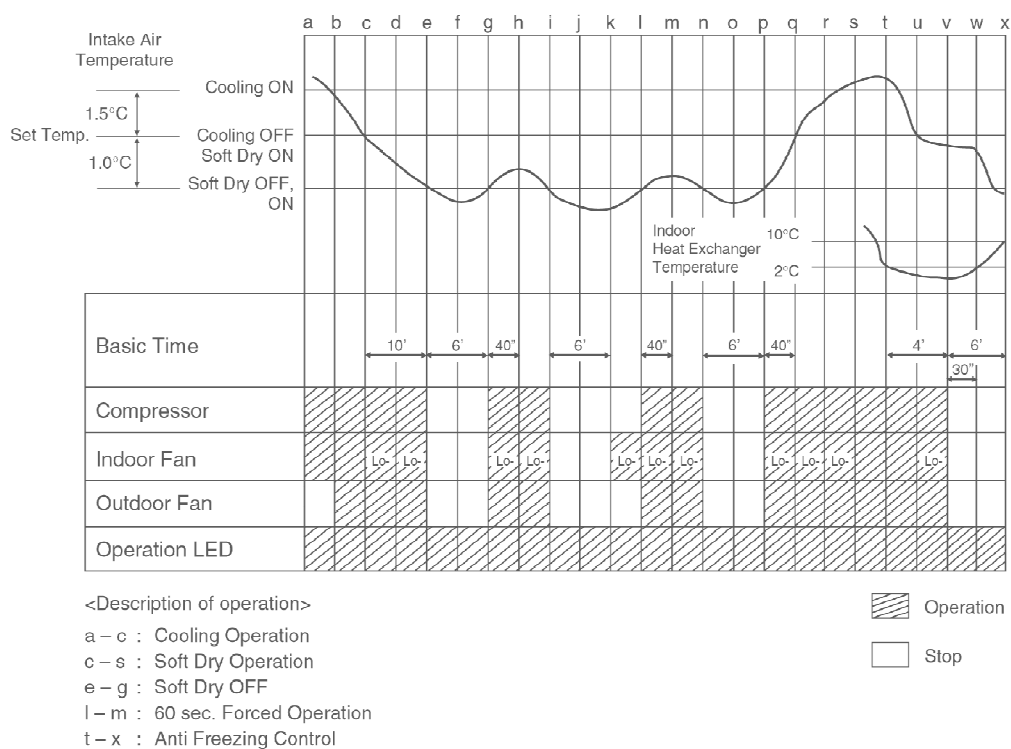
Automatic Fan Speed Mode

When Automatic Fan Speed is selected at Remote Control during Soft Dry operation.

- Fan speed off and on at Lo- speed.



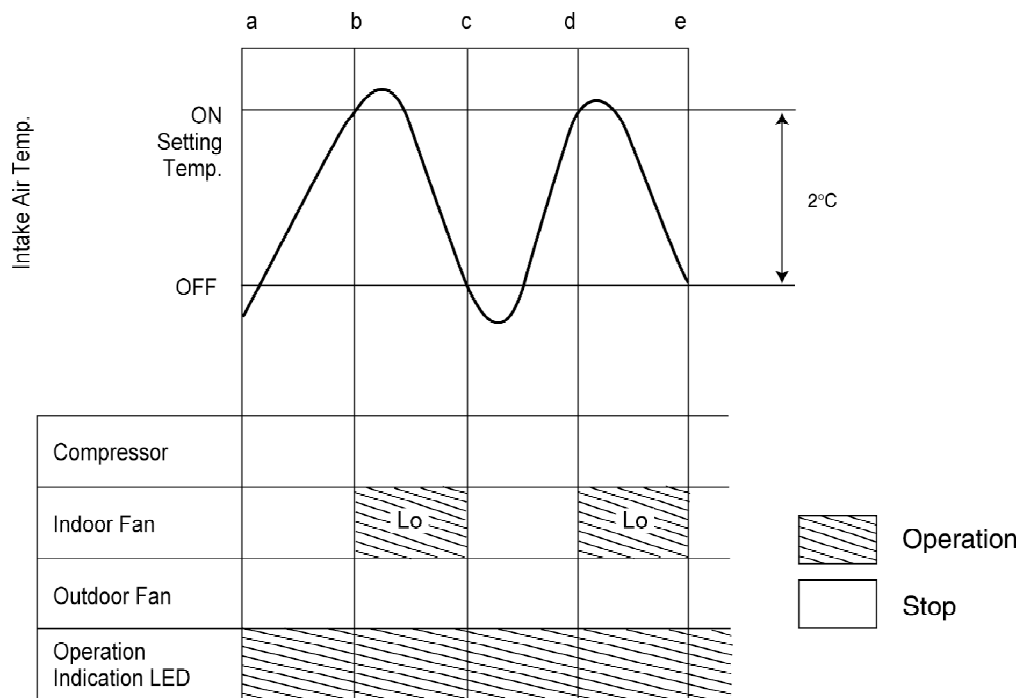
Soft Dry Operation Time Diagram



8.3. Air Circulation Mode Operation

- When the temperature near the ceiling reaches the setting temperature, Air Circulation Mode operation commences at low airflow volume. It stops when the temperature drops to 2°C below the setting temperature. /

Air Circulation Mode Operation Time Diagram



8.4. Automatic Mode Operation

Standard for Determining Operation Mode

↑
Intake Air
Temperature

23°C

Cooling Mode
Soft Dry Mode

	Setting Temperature (Standard)
Cooling Mode	25°C
Soft Dry Mode	22°C

- Indoor fan operates at SLo fan speed for 20 seconds.
- After judging indoor air temperature, the operation mode is determined and operation continued at the mode determined.
- After the operation mode has been determined, the mode does not change. However, Soft Dry mode operation includes Cooling mode operation.
- Room temperature adjustment.
The following are added to the setting temperature specified as above.

			Cooling	Soft Dry
Higher	→	+2°C	27°C	24°C
Standard	→	±0°C	25°C	22°C
Lower	→	-2°C	23°C	20°C

- The mode judging temperature and standard setting temperature can be increased by 2°C, by open the circuit of JX1 at indoor electronic controller.

↑ Intake Air Temperature 25°C	Cooling Mode	Setting Temperature (Standard)
	Soft Dry Mode	
	Cooling Mode	27°C
	Soft Dry Mode	24°C

8.5. Random Auto Restart Control

- If there is a power failure during air conditioner operation, operation will be automatically restarted after 3 to 4 minutes when the power is resumed.
It will start with previous operation mode and airflow direction. /
- Restart time is decided randomly using 4 parameter:-
Intake air temperature, setting temperature, fan speed and Air Swing Blade position. /
- This control can be omitted by open the circuit of JX2. (Refer Circuit Diagram) /

8.6. Indoor Fan Speed Control

- Auto Fan Speed Control
When set to Auto Fan Speed, the fan speed is adjusted between maximum and minimum setting as shown in the table. /
- Manual Fan Speed Control
Basic fan speed adjustment (3 settings, from Lo to Hi) can be carried out by using the Fan Speed selection button at the remote control. /

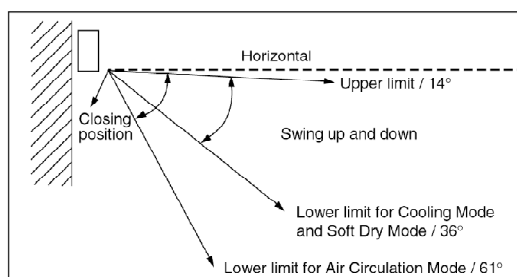
Tap				S Hi	Hi	Me	H Lo	C Lo	Lo-	S Lo	SSLo	Stop
Cooling	Normal	Manual	Hi		○							
			Me			○						
		Lo					○					
Dry		Air Volume Auto			○	○				○		○
		Manual							○			○
		Air Volume Auto							○			○
Air circulation		Manual			○	○		○				○
		Air Volume Auto						○				○
Mode judgement										○		

Fan Speed (Rpm)		
S Hi	1290	1270
Hi	1210	1230
Me	1040	1050
H Lo	940	960
C Lo	900	920
Lo-	850	840
S Lo	800	790
SS Lo	—	—
Q S Hi	—	—
Q Hi	1110	1130
Q Me	940	950
Q H Lo	—	—
Q Lo	800	820
Applicable Models	CS-PC9CKN	CS-PC12CKN

8.7. Vertical Airflow Direction Control

Vertical Airflow Direction Auto-Control

- When set a Airflow Direction Auto-Control with Air Swing button at the remote control, the louver swings up and down as shown in the diagram.
- The louver does not swing when the Indoor Fan Motor stops during operation at the upper limit.
- When stopped with remote control, the discharge vent is reset, and stopped at the closing position.



※ The left and right airflow direction louvers can be adjusted manually.

- ✕1. There is no swinging while indoor fan motor is stopped during Cooling and Soft Dry operation.
- ✕2. In Air Circulation operation, when the intake air temperature reaches set temperature, the air direction is changed from upper limit to lower limit. When the intake air temperature falls to lower than set temperature, the airflow direction is changed from lower limit to upper limit.

8.8. Remote Control Signal Receiving Sound

- Long beep sound will be heard when:-
- Stopping the Air Conditioner using ON/OFF switch.
- Short beep sound will be heard for others.
- To switch off the beep sound:-

Press the “Automatic Operation Button” continuously for 10 seconds or more (“beep” “beep” will be heard at the 10th second). Repeat the above if you want to switch ON the beep sound.

- ✕ However, if the “Automatic Operation Button” has been pressed the Automatic operation will be activated.

If you do not require this operation, you may change it by using the remote control.

9. Operation Details (CS-SC9CKN & CS-SC12CKN)

9.1. Cooling Mode Operation

Cooling in operation according to Remote Control setting.

Time Delay Safety Control (3 minutes)

- When the compressor is stopped by Remote Control, it restarts after 3 minutes when the Remote Control is turned ON.
- When the setting temperature is reached during cooling operation, the compressor stops and it will not start for 3 minutes.

7 minutes Time Save Control

- The compressor will start automatically if it has stopped for 7 minutes even if the room temperature is between the compressor ON temperature and OFF temperature.

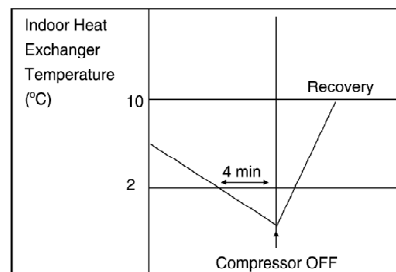
Starting Current Control

- When the compressor outdoor fan motor and indoor fan motor are simultaneously started, the indoor fan motor will operate 1.6 second later.

Anti-Freezing Control

- If the temperature of the indoor heat exchanger falls continuously below 2°C for 4 minutes or more, the compressor turns off to protect the indoor heat exchanger from freezing. The fan speed setting remains the same.
- Compressor will restart again when the indoor heat exchanger temperature rises to 10°C (Recovery).

✕ 3 minutes waiting of Time Delay Safety Control is valid for Cooling Operation.



Compressor Reverse Rotation Protection Control

- If the compressor is operating continuously for 5 minutes or longer and the temperature difference between intake air and indoor heat exchanger is 2.5°C or less for 2 minutes, compressor will stop and restart automatically. / (Time Delay Safety Control is valid)

• Compressor starts for ≥ 5 minutes
• $\Delta T \leq 2.5^\circ\text{C}$ for 2 minutes



Compressor
OFF

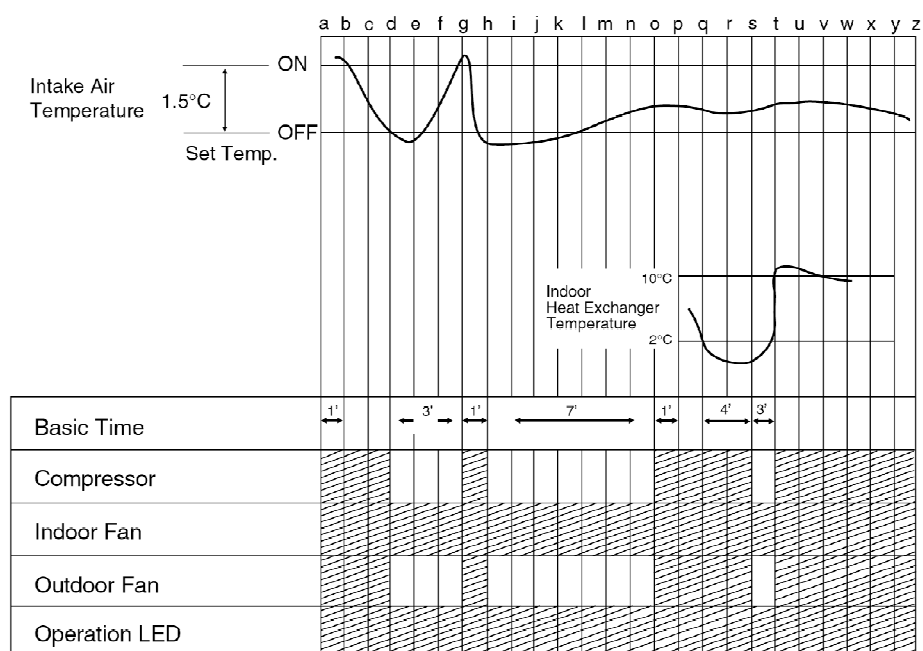


Compressor
restarts
(3 minutes waiting)

▲ $T = \text{Intake air temperature} - \text{Indoor heat exchanger temperature}$ /

This is to protect reverse rotation of the compressor when there is a instantaneous power failure.

Cooling Operation Time Diagram



<Description of operation>

d – g : Time Delay Safety Control (waiting for 3 minutes)

g – h : 60 sec. Forced Operation

h – o : 7 min. Time Save Control

q – u : Anti Freezing Control

Operation

Stop

9.2. Random Auto Restart Control

- If there is a power failure during air conditioner operation, operation will be automatically restarted after 3 to 4 minutes when the power is resumed.

It will start with previous operation mode and airflow direction. /

- Restart time is decided randomly using 4 parameter:-

Intake air temperature, setting temperature, fan speed and Air Swing Blade position. /

- This control can be omitted by open the circuit of JX2. (Refer Circuit Diagram) /

9.3. Indoor Fan Speed Control

- Manual Fan Speed Control

Basic fan speed adjustment (3 settings, from Lo to Hi) can be carried out by using the Fan Speed selection button at the remote control. /

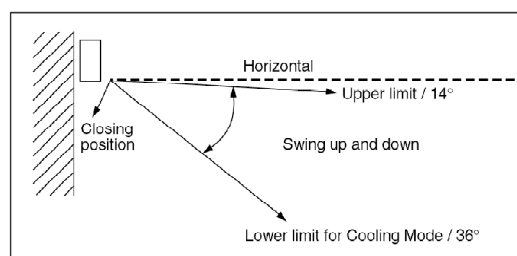
Tap				S Hi	Hi	Me	H Lo	C Lo	Lo-	S Lo	SSLo	Stop
Cooling	Normal	Manual	Hi		○							
			Me			○						
			Lo					○				

Fan Speed (Rpm)		
S Hi	1290	1270
Hi	1210	1230
Me	1040	1050
H Lo	940	960
C Lo	900	920
Lo-	850	840
S Lo	800	790
SS Lo	—	—
Q S Hi	—	—
Q Hi	1110	1130
Q Me	940	950
Q H Lo	—	—
Q Lo	800	820
Applicable Models	CS-SC9CKN	CS-SC12CKN

9.4. Vertical Airflow Direction Control

Vertical Airflow Direction Auto-Control

- When set a Airflow Direction Auto-Control with Air Swing button at the remote control, the louver swings up and down as shown in the diagram.
- The louver does not swing when the Indoor Fan Motor stops during operation at the upper limit.
- When stopped with remote control, the discharge vent is reset, and stopped at the closing position.



※ The left and right airflow direction louvers can be adjusted manually.

- ※1. There is no swinging while indoor fan motor is stopped during Cooling operation.

10. Operating Instructions

11. Installation Instructions

Required tools for Installation Works			
1. Philips screw driver	5. Spanner	9. Gas leak detector	13. Multimeter
2. Level gauge	6. Pipe cutter	10. Measuring tape	14. Torque wrench 18 N.m (1.8 kgf.m) 42 N.m (4.2 kgf.m) 55 N.m (5.5 kgf.m)
3. Electric drill, hole core drill (ø70 mm)	7. Reamer	11. Thermometer	15. Vacuum pump
4. Hexagonal wrench (4 mm)	8. Knife	12. Megameter	16. Gauge manifold

11.1. Safety Precautions

- Read the following “SAFETY PRECAUTIONS” carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below.
Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

 WARNING	This indication shows the possibility of causing death or serious injury.
--	---

 CAUTION	This indication shows the possibility of causing injury or damage to property.
--	--

The items to be followed are classified by the symbols:

	Symbol with background white denotes item that is PROHIBITED from doing.
---	--

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.



WARNING

1. Engage dealer or specialist for installation. If installation done by the user is defective, it will cause water leakage, electrical shock or fire.
2. Install according to this installation instruction strictly. If installation is defective, it will cause water leakage, electrical shock or fire.
3. Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.
4. Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury.
5. For electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.
6. Use the specified cable (1.5 mm²) and connect tightly for indoor/outdoor connection. Connect and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.
7. Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.
8. When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.
9. Do not damage or use unspecified power supply cord. Otherwise, it will cause fire or electrical shock.
10. Do not modify the length of the power supply cord or use of the extension cord, and do not share the single outlet with other electrical appliances. Otherwise, it will cause fire or electrical shock.



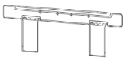
CAUTION

1. The equipment must be earthed. It may cause electrical shock if grounding is not perfect.
2. Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.
3. Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.

ATTENTION

1. **Selection of the installation location.**
Select a installation location which is rigid and strong enough to support or hold the unit, and location for easy maintenance.
2. **Power supply connection to the room air conditioner.**
Connect the power supply cord of the room air conditioner to the mains using one of the following method.
Power supply point shall be the place where there is ease for access for the power disconnect case of emergency.
In some countries, permanent connection of this room air conditioner to the power supply is permitted.
 1. Power supply connection to the receptacle using a power plug. / Use an approved 15A/16A power plug with earth pin for the connection socket.
 2. Power supply connection to a circuit breaker for the permanent connection. Use an approved 16A circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3 mm contact gap.
3. **Do not release refrigerant.**
Do not release refrigerant during piping work for installation, reinstallation and during repairing refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.
4. **Installation work.**
It may need two people to carry out the installation work.
5. **Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.**

Attached accessories

No.	Accessories part	Qty.	No.	Accessories part	Qty.
1	Installation plate 	1	5	Remote control holder 	1
2	Installation plate fixing screw 	6	6	Remote control holder fixing screw 	2
3	Remote control 	1	7	Remote control wire holder  (SC9CK, SC12CK)	3
4	Battery  (PC9CK, PC12CK, E719K, E919K, E1219K)	2	8	Remote control holder fixing screw  (SC9CK, SC12CK)	3

Applicable piping kit

CZ-3F5, 7AEN (PC9CK, SC9CK, E719K, E919K)

CZ-4F5, 7, 10AN (PC12CK, SC12CK, E1219K)

SELECT THE BEST LOCATION

INDOOR UNIT

- There should not be any heat source or steam near the unit.
- There should not be any obstacles blocking the air circulation.
- A place where air circulation in the room is good.
- A place where drainage can be easily done.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.
- Recommended installation height for indoor unit shall be at least 2.3 m.

OUTDOOR UNIT

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be affected by hot air discharged.
- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.

- If piping length is over the common length, additional refrigerant should be added as shown in the table.

REMOTE CONTROL

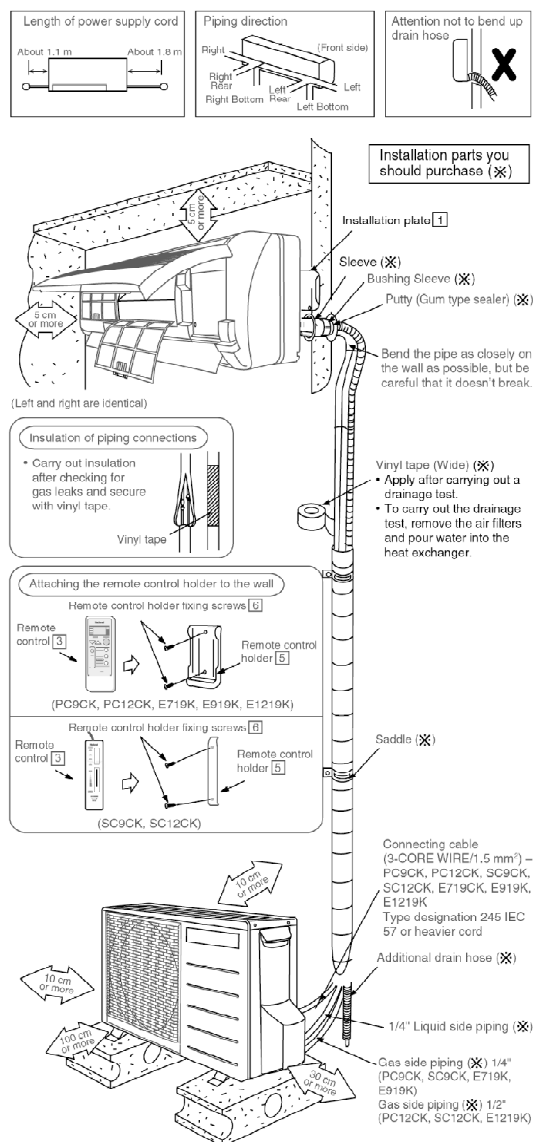
- Do not install at places where there is direct sunlight or near any heat source.

Model	Piping size		Rated Length (m)	Max. Elevation (m)	Max. Piping Length (m)	Additional Refrigerant (g/m)
	Gas	Liquid				
PC9CK, SC9CK, E719K, E919K	3/8"	1/4"	7.5	5	10	10
PC12CK, SC12CK, E1219K	1/2"	1/4"	7.5	5	15	10

Example: For PC12CK

If the unit will be installed at a 10m distance, the quantity of additional refrigerant should be 25g $(10 - 7.5)m \times 10g/m = 25g$

Indoor/Outdoor Unit Installation Diagram



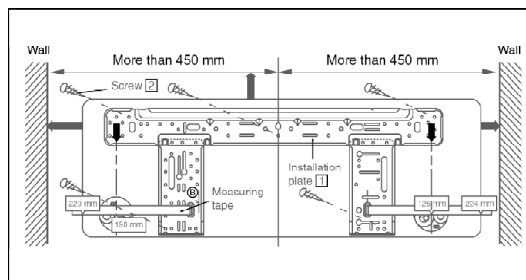
- This illustration is for explanation purposes only. / The indoor unit will actually face a different way.

11.2. INDOOR UNIT

11.2.1. SELECT THE BEST LOCATION / (Refer to “Select the best location” section)

11.2.2. HOW TO FIX INSTALLATION PLATE

The mounting wall is strong and solid enough to prevent it from the vibration.



The centre of installation plate should be at more than 450 mm at right and left of the wall.

The distance from installation plate edge to ceiling should more than 67 mm.

From installation plate left edge to unit's left side is 47 mm.

From installation plate right edge to unit's right is 73 mm.

- (B)** : For left side piping, piping connection for liquid should be about 14 mm from this line.
 For left side piping, piping connection for gas should be about 56 mm from this line.
 For left side piping, piping connecting cable should be about 785 mm from this line.
 :

1. Mount the installation plate on the wall with 5 screws or more. / (If mounting the unit on the concrete wall consider using anchor bolts.)

- Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

2. Drill the piping plate hole with $\varnothing 70$ mm hole-core drill.

- Line according to the arrows marked on the lower left and right side of the installation plate. The meeting point of the extended line is the centre of the hole. Another method is by putting measuring tape at position as shown in the diagram above. The hole centre is obtained by measuring the distance namely 150 mm and 125 mm for left and right hole respectively.
- Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.

11.2.3. TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

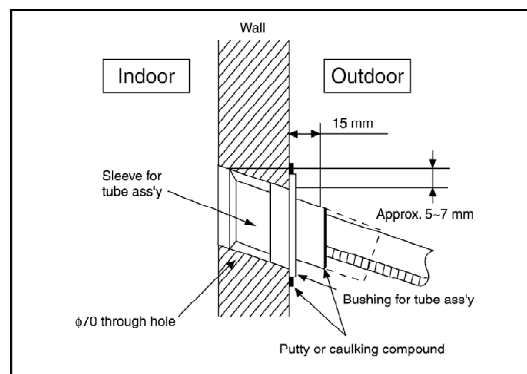
- 1. Insert the piping sleeve to the hole.**
- 2. Fix the bushing to the sleeve.**

3. Cut the sleeve until it extrudes about 15 mm from the wall.

Caution

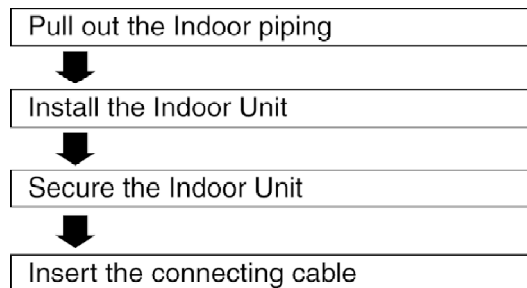
When the wall is hollow, please be sure to use the sleeve for tube ass'y to prevent dangers caused by mice biting the connecting cable.

4. Finish by sealing the sleeve with putty or caulking compound at the final stage.

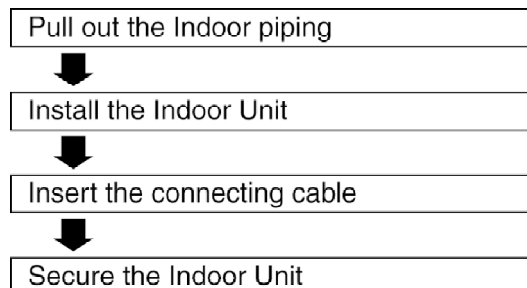


11.2.4. INDOOR UNIT INSTALLATION

1. For the right rear piping



2. For the right and right bottom piping



3. For the embedded piping

Replace the drain hose



Bend the embedded piping



- Use a spring bender or equivalent to bend the piping so that the piping is not crushed.

Install the Indoor Unit



Cut and flare the embedded piping



- When determining the dimension of the piping, slide the unit all the way to the left on the installation plate. Refer to the section "Cutting and flaring the piping".

Pull the connecting cable into Indoor Unit



- The inside and outside connecting cable can be connected without removing the front grille.

Connect the piping



- Please refer to "Connecting the piping" column in outdoor unit section. (Below steps are done after connecting the outdoor piping and gas-leakage confirmation.)

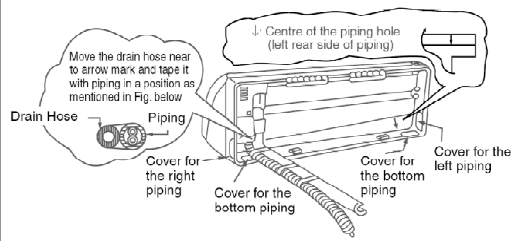
Insulate and finish the piping



- Please refer to "Piping and finishing" column of outdoor section and "Insulation of piping connections" column as mentioned in Indoor/Outdoor Unit Installation.

Secure the Indoor Unit

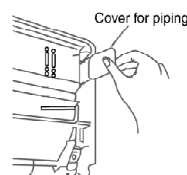
Pull out the piping and drain hose



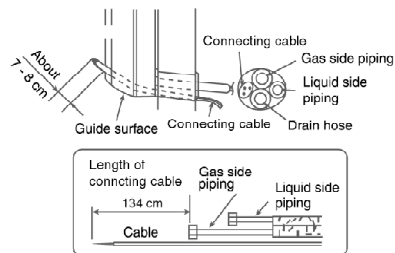
How to keep the cover

In case of the cover is cut, keep the cover at the rear of chassis as shown in the illustration for future reinstallation.

(Left, right and 2 bottom covers for piping)

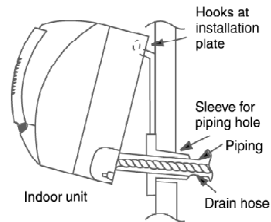


Insert the connecting cable



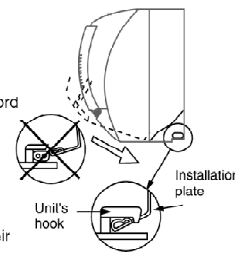
Install the Indoor Unit

Hook the indoor unit onto the upper portion of installation plate (Engage the indoor unit with the upper edge of the installation plate). Ensure the hooks are properly seated on the installation plate by moving in left and right.

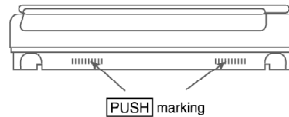


Secure the Indoor Unit

1. Tape the extra power supply cord in a bundle and keep it behind the chassis.
 - Ensure that the power supply cord is not clamped in between the unit's hook (2 positions) and installation plate.
2. Press the lower left and right side of the unit against the installation plate until hooks engages with their slots (sound click).



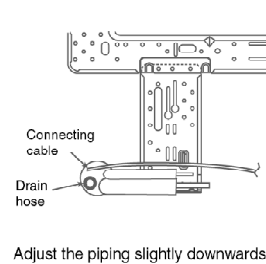
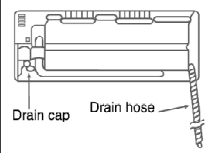
To take out the unit, push the **PUSH** marking at the bottom unit, and pull it slightly towards you to disengage the hooks from the unit.

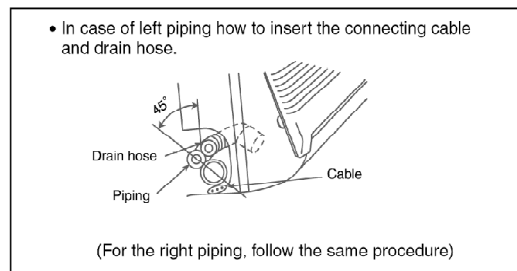
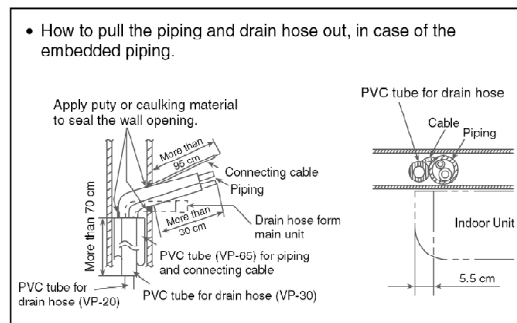
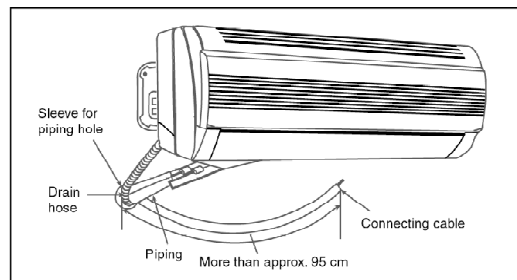


(This can be used for left rear piping & left bottom piping also.)

Exchange the drain hose and the cap

Refer view for left piping installation





11.2.5. CONNECT THE CABLE TO THE INDOOR UNIT

1. The inside and outside connecting cable can be connected without removing the front grille.
2. Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC9CK, PC12CK, SC9CK, SC12CK, E719K, E919K, E1219K) × 1.5 mm² flexible cord, type designation 245 IEC 57 or heavier cord.

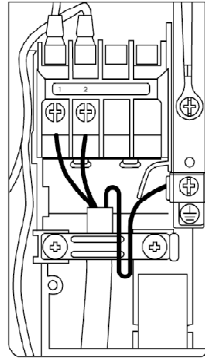
- Ensure the color of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
- Earth lead wire shall be longer than the other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from the anchorage. /

CS/CU-PC9CK, CS/CU-PC12CK, CS-SC9CK/CU-PC9CK
CS-SC12CK/CU-PC12CK, CS/CU-E719K, CS/CU-E919K, CS/CU-E1219K

Terminals on the indoor unit	1	2	⊕
Color of wires			
Terminals on the outdoor unit	1	2	⊕

- Secure the cable onto the control board with the holder

(clammer).

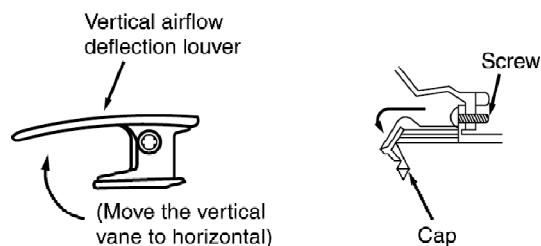


HOW TO TAKE OUT FRONT GRILLE

Please follow the steps below to take out front grille if necessary such as when servicing.

1. Set the vertical airflow direction louver to the horizontal position.
2. Slide down the two caps on the front grille as shown in the illustration below, and then remove the two mounting screws.
3. Pull the lower section of the front grille towards you to remove the front grille.

When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position and then carry out above steps 2 - 3 in the reverse order.



AUTO SWITCH OPERATION

(PC9CK, PC12CK, E719K, E919K, E1219K ONLY)

The below operations will be performed by pressing the “AUTO” switch.

1. AUTO OPERATION MODE

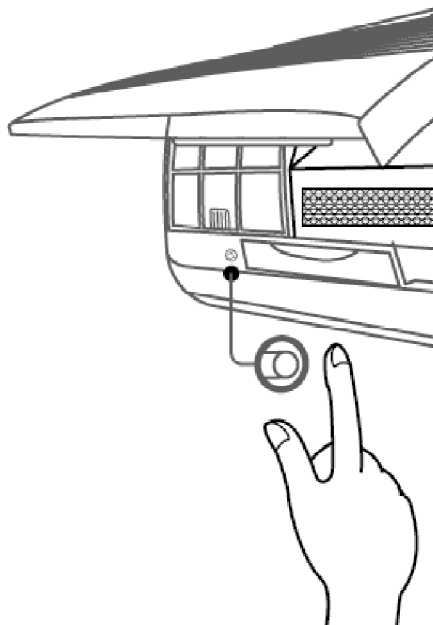
The Auto operation will be activated immediately once the Auto Switch is pressed.

2. TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE)

The Test Run operation will be activated if the Auto Switch is pressed continuously for more than 5 sec. to below 10 sec.. A “pep” sound will occur at the fifth sec., in order to identify the starting of Test Run operation

3. REMOTE CONTROLLER RECEIVING SOUND ON/OFF

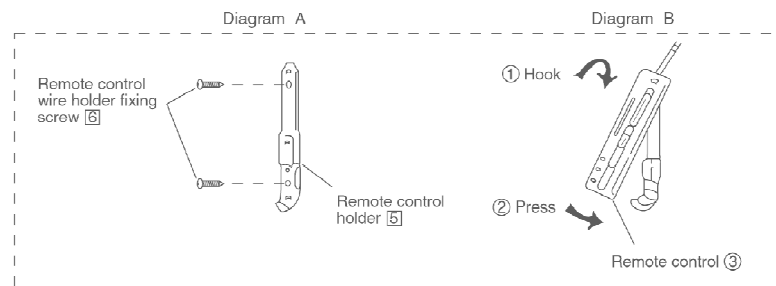
The ON/OFF of Remote Controller receiving sound can be change over by pressing the “AUTO” Switch continuously for 10 sec. and above. A “pep”, “pep” sound will occur at the tenth sec., in order to indicate the “ON/OFF” change over of remote control receiving sound.



HOW TO INSTALL WIRED REMOTE CONTROL

(SC9CK, SC12CK ONLY)

1. Select the best location.
(Refer to "Select the Best Location" Section)
2. Install the wired remote control holder to the wall by fixing it with two screws (Refer to "Diagram A").
3. Mount the wired remote control. (Refer to "Diagram B").



Note: Install the remote control less than 1.5m from the unit and within user's reach. It is recommended to use the attached cord holders for good finish when the cord is fixed on a wall or a pillar.

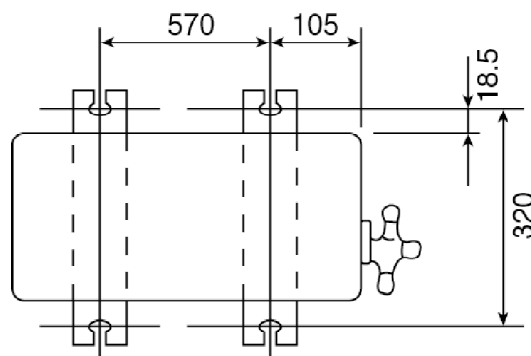
11.3. OUTDOOR UNIT

11.3.1. SELECT THE BEST LOCATION / (Refer to "Select the best location" section)

11.3.2. INSTALL THE OUTDOOR UNIT

- After selecting the best location, start installation according to Indoor/Outdoor Unit Installation Diagram.

1. Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut. (ø10 mm).
2. When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt or nails.



11.3.3. CONNECTING THE PIPING

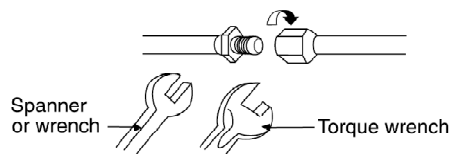
Connecting The Piping To Indoor Unit

Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)

Connect the piping

- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench in specified torque as stated in the table.

Connecting The Piping To Outdoor Unit



MODEL	Piping size (Torque)	
	Gas	Liquid
PC9CK, SC9CK, E719K, E919K	3/8" (42 N.m)	1/4" (18 N.m)
PC12CK, SC12CK, E1219K	1/2" (55 N.m)	1/4" (18 N.m)

Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (located at valve) onto the copper pipe.

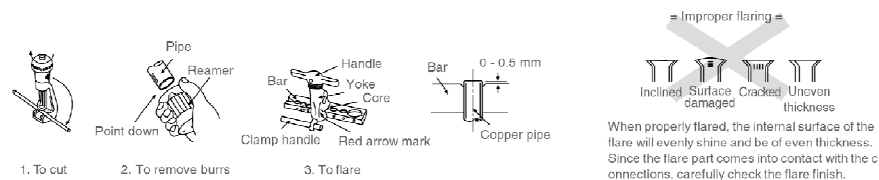
Align center of piping to valves and then tighten with torque wrench to the specified torque as stated in the table.

CUTTING AND FLARING THE PIPING

1. Please cut using pipe cutter and then remove the burrs.
2. Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused.

Turn the piping end down to avoid the metal powder entering the pipe.

3. Please make flare after inserting the flare nut onto the copper pipes.

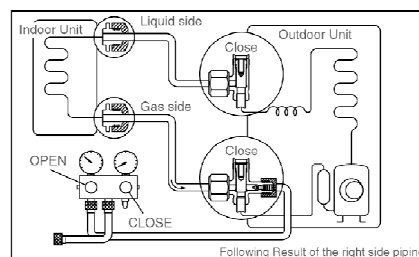
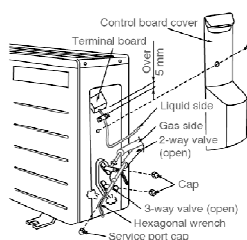


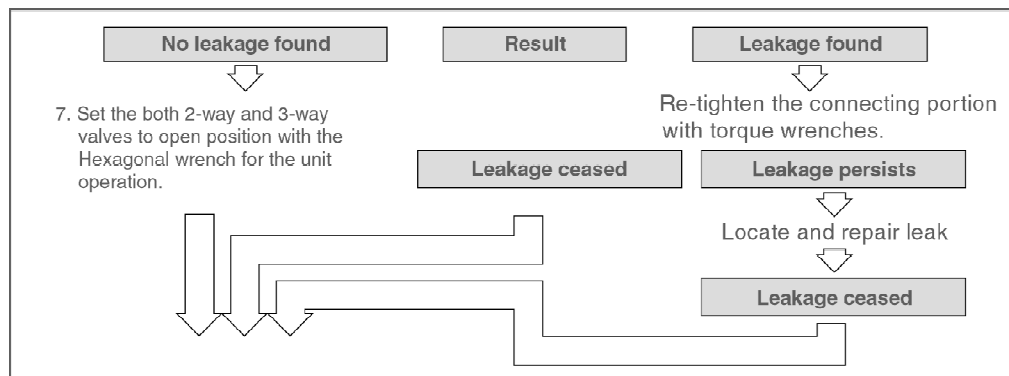
11.3.4. AIR PURGING OF THE PIPING AND INDOOR UNIT

The remaining air in the Refrigeration cycle which contains moisture may cause malfunction on the compressor.

1. Remove the caps from the 2-way and 3-way valves.
2. Remove the service-port cap from the 3-way valves.
3. To open the valve, turn the valve stem of 2-way valve counter-clockwise approx. 90° and hold it there for ten seconds, then close it.
4. Check gas-leakage of the connecting portion of the pipings.
* For the left pipings, refer to item 4(A).
5. To open 2-way valve again, turn the valve stem counter-clockwise until it stops.
6. To purge the air, push the pin on the service port of 3-way valve for three seconds using with a hexagonal wrench and set it free for one minute.

- ~ Repeat this three times.





4(A). Checking gas leakage for the left piping.

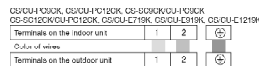
- (1) * Connect the manifold gauge to the service port of 3-way valve.
Measure the pressure.

*

- (2) * Keep it for 5-10 minutes.
Ensure that the pressure indicated on the
* gauge is the same as that of measured
during the first time.

11.3.5. CONNECT THE CABLE TO THE OUTDOOR UNIT

1. Remove the control board cover from the unit by loosening the screw.
2. Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC9CK, PC12CK, SC9CK, SC12CK, E719K, E919K, E1219K) × 1.5 mm² flexible cord, type designation 245 IEC 57 or heavier cord.



3. Secure the cable onto the control board with the holder (clammer).
4. Attach the control board cover back to the original position with the screw.

11.3.6. PIPE INSULATION

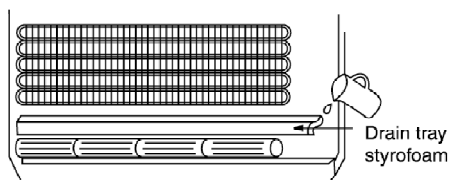
1. Please carry out insulation at pipe connection portion as

mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.

2. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.

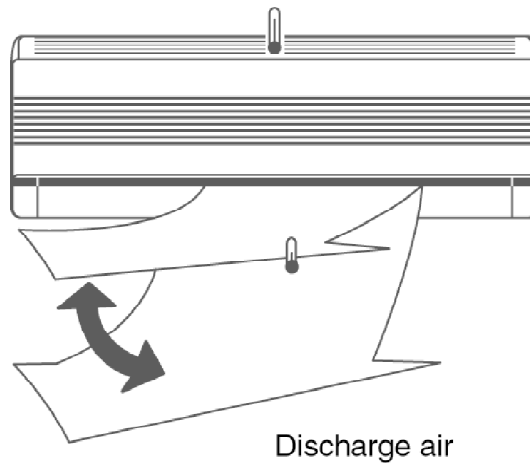
CHECK THE DRAINAGE

- Open front panel and remove air filters. / (Drainage checking can be carried out without removing the front grille.)
- Pour a glass of water into the drain tray-styrofoam.
- Ensure that water flows out from drain hose of the indoor unit.



EVALUATION OF THE PERFORMANCE

- Operate the unit at cooling operation mode for fifteen minutes or more.
- Measure the temperature of the intake and discharge air.
- Ensure the difference between the intake temperature and the discharge is more than 8°C.

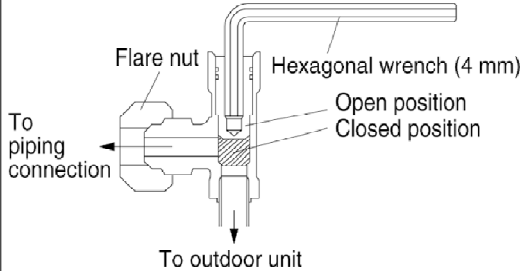
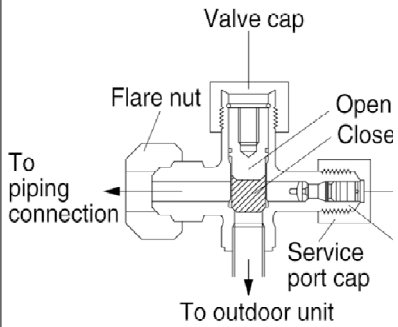


CHECK ITEMS

- ☐ Is there any gas leakage at flare nut connections?
- ☐ Has the heat insulation been carried out at flare nut connection?
- ☐ Is the connecting cable being fixed to terminal board firmly?
- ☐ Is the connecting cable being clamped firmly?
- ☐ Is the drainage OK?
(Refer to "Check the drainage" section)
- ☐ Is the earth wire connection properly done?

- ☐ Is the indoor unit properly hooked to the installation plate?
- ☐ Is the power supply voltage complied with rated value?
- ☐ Is there any abnormal sound?
- ☐ Is the cooling operation normal?
- ☐ Is the thermostat operation normal?
- ☐ Is the remote control's LCD operation normal? (PC9CK, PC12CK, E719K, E919K, E1219K)

12. 2-way, 3-way Valve

	2-way Valve (Liquid Side)	3-way Valve (Gas Side)	
			
Works	Shaft Position	Shaft Position	Service
Shipping	Close (With valve cap)	Close (With valve cap)	Close (With valve cap)
Evacuation (Installation and Re-installation)	Close (Counter-Clockwise)	Close (Clockwise)	Open (Push)
Operation	Open (With valve cap)	Open (With valve cap)	Close (With valve cap)

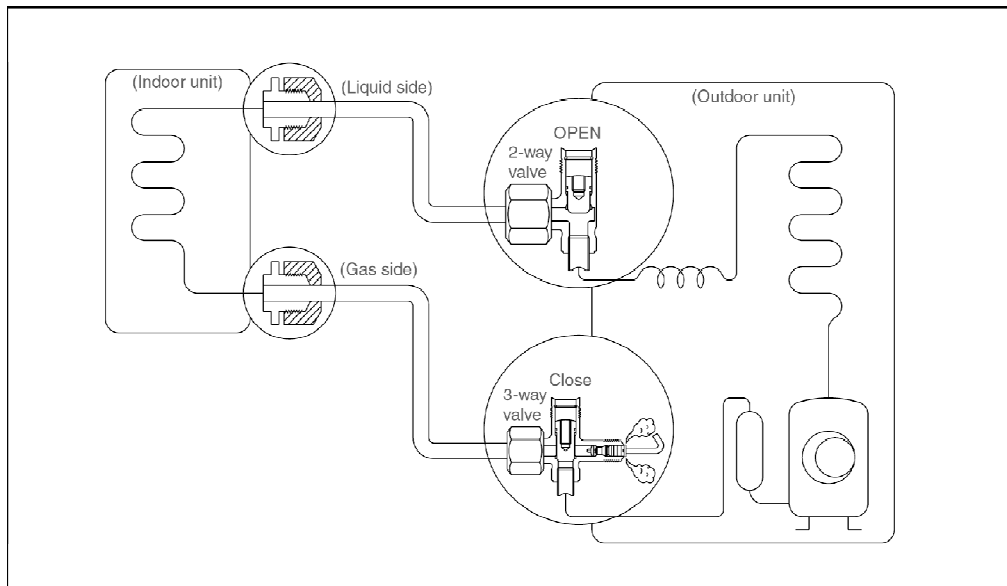
	2-way Valve (Liquid Side)	3-way Valve (Gas Side)	
Pumping down (Transferring)	Close (Clockwise)	Open (Counter- Clockwise)	Op (Conn manifol
Evacuation (Servicing)	Open	Open	Op With vacu
Gas charging (Servicing)	Open	Open	Op (With cl cylir
Pressure check (Servicing)	Open	Open	Op (Conn manifol
Gas releasing (Servicing)	Open	Open	Op (Conn manifol

12.1. Air Purging of the Piping and Indoor Unit

12.1.1. Air purging (Installation)

Required tools: hexagonal wrench, adjustable wrench, torque wrenches, wrench to hold the joints and gas leak detector. / The additional gas for air purging has been charged in the outdoor unit. / However, if the flare connections have not been done correctly and there gas leaks, a gas cylinder and the charge set will be needed.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration pipings, it will affect the compressor, reduce the cooling capacity, and could lead to a malfunction.



Service port cap / Be sure, using a torque wrench to tighten the service port cap (after using the service port), so that it prevents the gas leakage from the refrigeration cycle.

Procedure:

- 1. Recheck the piping connections.**
- 2. Open the valve stem of the 2-way valve counter-clockwise approximately 90°, wait 10 seconds, and then set it to closed position.**
 - Be sure to use a hexagonal wrench to operate the valve stem.
- 3. Check for gas leakage.**
 - Check the flare connection for gas leakage.
- 4. Purge the air from the system**
 - Set the 2-way valve to the open position and remove the cap from the 3-way valve's service port.
 - Using the hexagonal wrench to press the valve core pin, discharge for three seconds and then wait for one minute. / Repeat this three times.
- 5. Use torque wrench to tighten the service port cap to a torque of 1.8 kg.m. (18 N.m).**
- 6. Set the 3-way valve to the opened position.**
- 7. Mount the valve stem nuts to the 2-way and 3-way valves.**

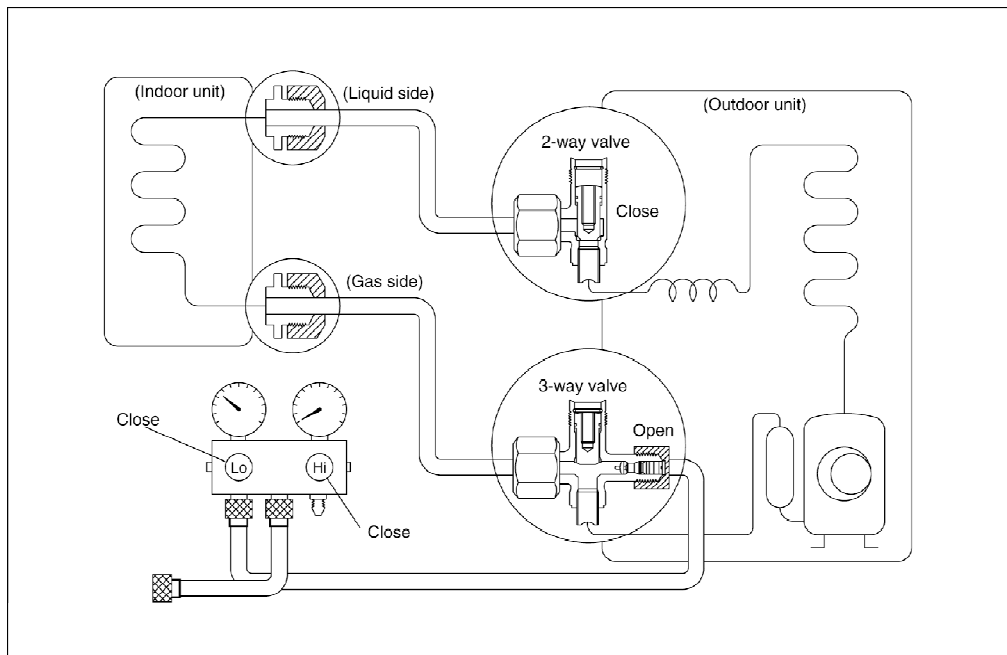
8. Check for gas leakage.

- At this time, especially check for gas leakage from the 2-way and 3-way's stem nuts, and from the service port cap.

Caution

If gas leakage is discovered in step (3) above, take the following measures:
If the leaks stop when the piping connections are tightened further, continue working from step (4).
If the gas leaks do not stop when the connections are retightened, repair the location of the leak, discharge all of the gas through the service port, and then recharge with the specified amount of gas from a gas cylinder.

12.1.2. Pumping down (Re-installation)

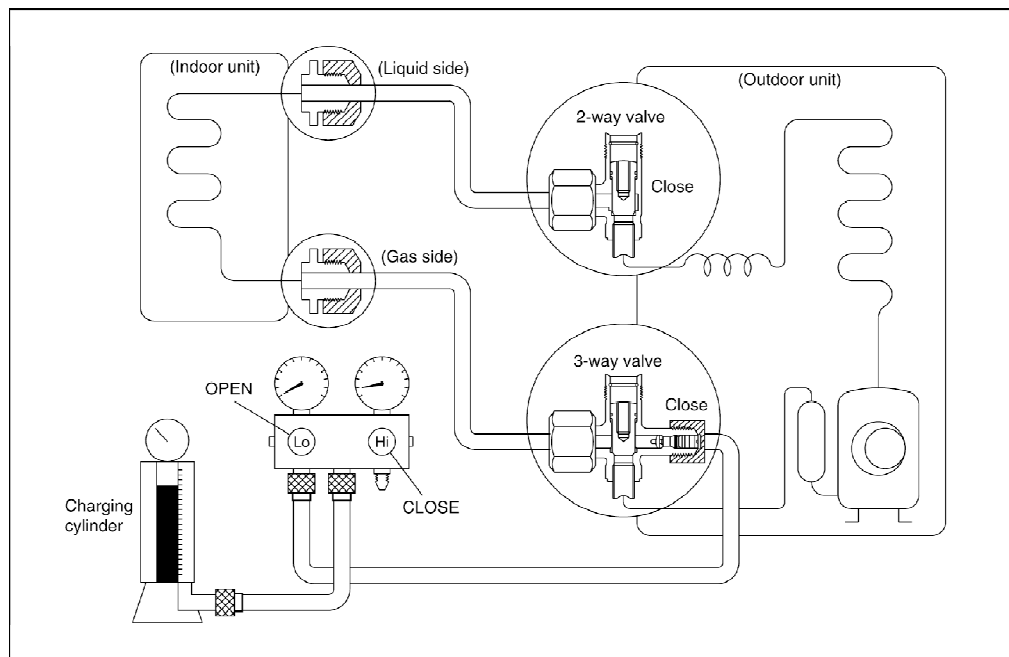


Procedure:

1. Confirm that both the 2-way and 3-way valves are set to the opened position.

- Remove the valve stem caps and confirm that the valve stems are in the opened position.
 - Be sure to use a hexagonal wrench to operate the valve stems.
2. Operate the unit for 10 to 15 minutes.
 3. Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.
 - Connect the charge hose with the push pin to the Gas service port.
 4. Air purging of the charge hose.
 - Open the low-pressure valve on the charge set slightly to purge air from the charge hose.
 5. Set the 2-way valve to the close position.
 6. Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 1 kg/cm²G (0.1 MPa).
 7. Immediately set the 3-way valve to the closed position.
 - Do this quickly so that the gauge ends up indicating 3 to 5 kg/cm²G (0.3 to 0.5 MPa).
 8. Disconnect the charge set, and mount the 2-way and 3-way valve's stem nuts and the service port caps.
 - Use a torque wrench to tighten the service port cap to a torque of 1.8 kg.m (18 N.m).
 - Be sure to check for gas leakage.

12.1.3. Re-air purging (Re-installation)



Procedure:

- 1. Confirm that both the 2-way and 3-way valves are set to the closed position.**
- 2. Connect the charge set and a charging cylinder to the service port of the 3-way valve.**
 - Leave the valve on the charging cylinder closed.
- 3. Air purging.**
 - Open the valves on the charging cylinder and the charge set. Purge the air by loosening the flare nut on the 2-way valve approximately 45° for 3 seconds then closing it for 1 minute; repeat 3 times.
 - After purging the air, use a torque wrench to tighten the flare nut on the 2-way valve.
- 4. Check for gas leakage.**
 - Check the flare connections for gas leakage.
- 5. Discharge the refrigerant.**
 - Close the valve on the charging cylinder and discharge the refrigerant until the gauge indicates 3 to 5 kg/cm₂G (0.3 to 0.5

MPa)

6. Disconnect the charge set and the charging cylinder, and set the 2-way and 3-way valves to the open position.

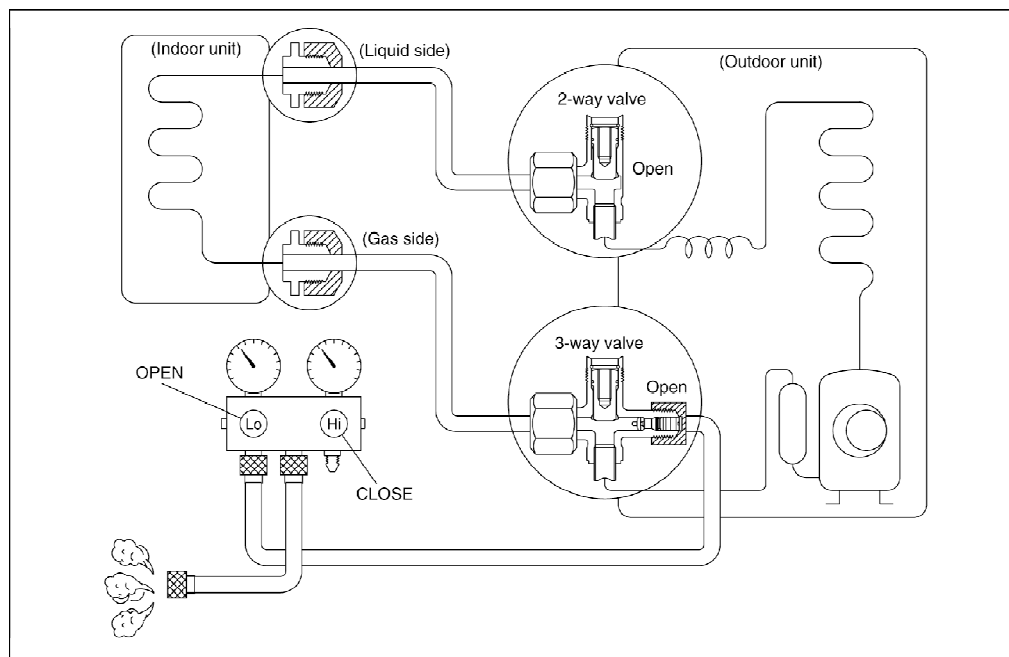
- Be sure to use a hexagonal wrench to operate the valve stems.

7. Mount the valve stem nuts and the service port cap.

- Be sure to use a torque wrench to tighten the service port cap to a torque 1.8 kg.m (18 N.m).
- Be sure to check for gas leakage.

12.1.4. Balance refrigerant of the 2-way, 3-way valves

(Gas leakage)



Procedure:

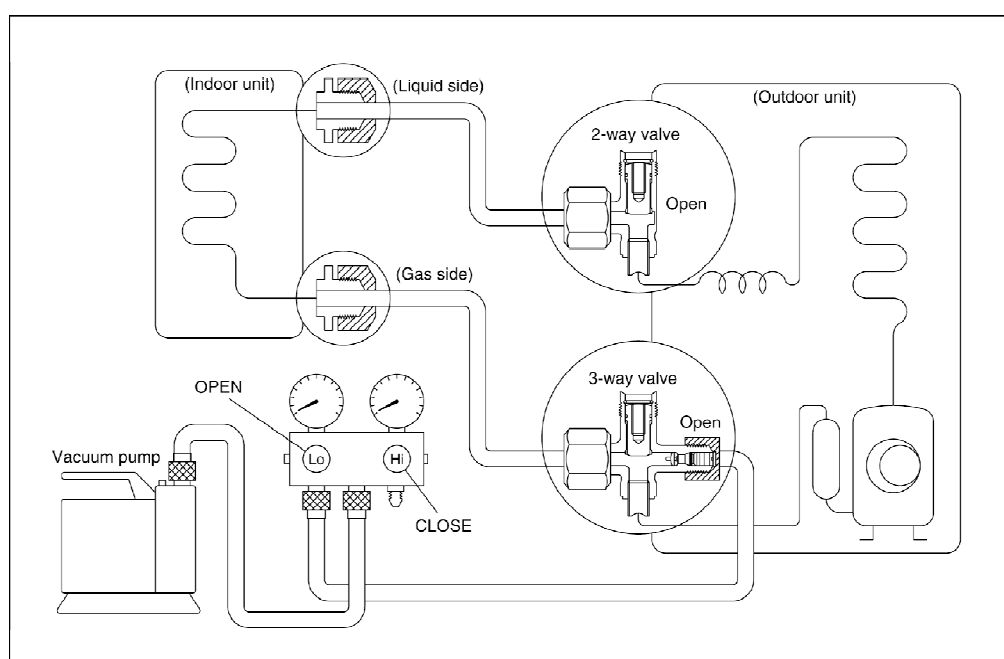
- 1. Confirm that both the 2-way and 3-way valves are set to the open position.**
- 2. Connect the charge set to the 3-way valve's service port.**
 - Leave the valve on the charge set closed.
 - Connect the charge hose with the push pin to the service port.
- 3. Open the valves (Low side) on the charge set and discharge the**

refrigerant until the gauge indicates 0.5 to 1 kg/cm²G (0.05 to 0.1 MPa) .

- If there is no air in the refrigeration cycle [the pressure when the air conditioner is not running is higher than 1 kg/cm²G (0.1 MPa)], discharge the refrigerant until the gauge indicates 0.5 to 1 kg/cm²G (0.05 to 0.1 MPa). If this is the case, it will not be necessary to apply a evacuation.
- Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will be discharged.

12.1.5. Evacuation (Installation)

(No refrigerant in the refrigeration cycle)



Procedure:

1. Connect the vacuum pump to the charge set's centre hose.
2. Evacuation for approximately one hour.
 - Confirm that the gauge needle has moved toward -0.1 MPa (-76 cmHg) [vacuum of 4 mmHg or less.]
3. Close the valve (Low side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).

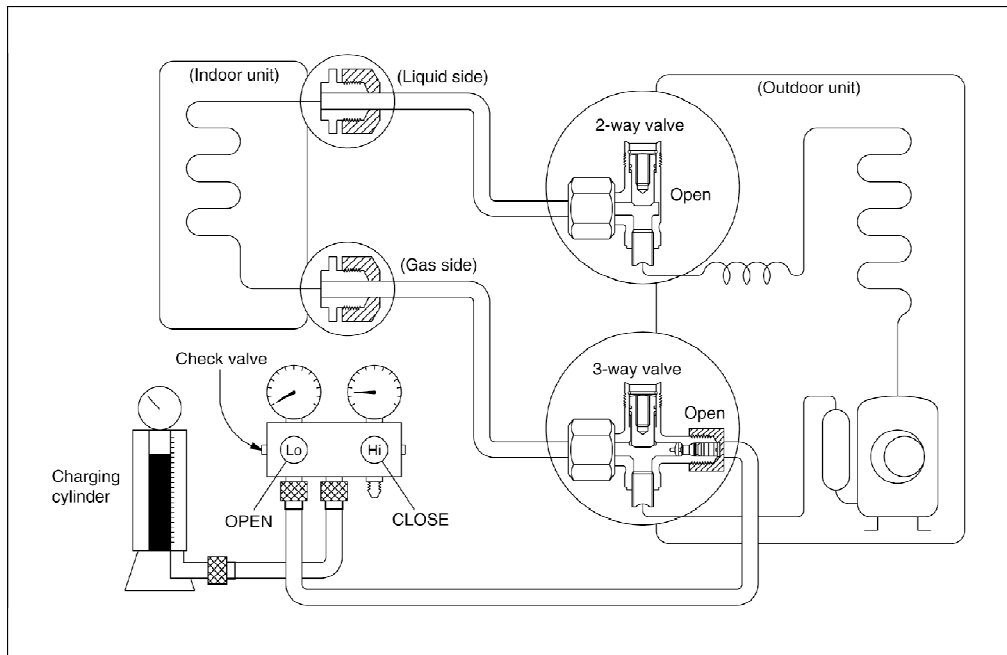
4. Disconnect the charge hose from the vacuum pump.

- Vacuum pump oil

If the vacuum pump oil becomes dirty or depleted, replenish as needed.

12.1.6. Gas charging

(After Evacuation)



Procedure:

1. Connect the charge hose to the charging cylinder.

- Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.

2. Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air (be careful of the liquid refrigerant).

3. Open the valve (Low side) on the charge set and charge the system with liquid refrigerant.

- If the system cannot be charged with the specified amount of refrigerant, it can be charged with a little at a time

(approximately 150 g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure. (pumping down-pin)

This is different from previous procedures. Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with large amount of liquid refrigerant while operating the air conditioner.

4. Immediately disconnect the charge hose from the 3-way valve's service port.

- Stopping partway will allow the refrigerant to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner, turn off the air conditioner before disconnecting the hose.

5. Mount the valve stem caps and the service port cap.

- Use torque wrench to tighten the service port cap to a torque of 18 N.m.
- Be sure to check for gas leakage.

13. Servicing Information

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100° F/600°C).

13.1. Indoor Electronic Controllers Removal Procedures

1. The Electronic Controller, a Signal Receiver and an Indicator (Fig. 3**) can be seen by the below steps:**

- Remove the 2 caps and 2 screws at the bottom of the Front Grille. (**Fig. 1**)
- Remove the Front Grille by releasing the 2 hooks at the top of

the Front Grille. (**Fig. 1**)

- Remove the Control Board Cover by releasing the 2 tabs at left, 1 tab on top and 1 tab at right side of the Control Board Cover. (**Fig. 2**)

2. To remove the Electronic Controller:

- Release the Particular Piece. (**Fig. 3**)
- Release the hook that hold the Electronic Controller. (**Fig. 3**)

Fig. 1

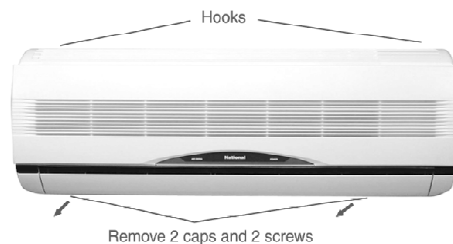


Fig. 2

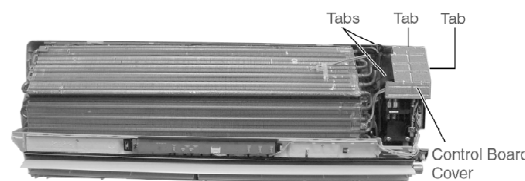
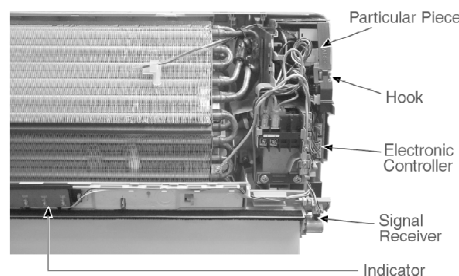


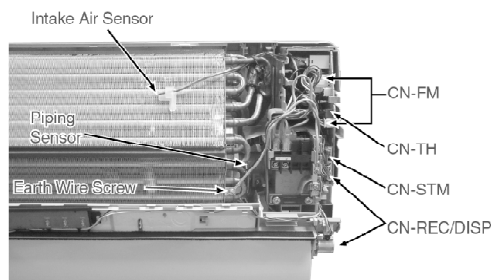
Fig. 3



13.2. Indoor Fan Motor and Cross Flow Fan Removal Procedures

- Remove the Control Board by:-
- Releasing CN-REC/DISP connectors. (**Fig. 4**)
- Releasing CN-FM connectors. (**Fig. 4**)
- Releasing CN-STM connector. (**Fig. 4**)
- Removing the Earth Wire screw. (**Fig. 4**)
- Releasing the Intake Air Sensor. (**Fig. 4**)
- Releasing the Piping Sensor. (**Fig. 4**)

Fig. 4



- Pulling out the Drain Hose from outlet to remove the Discharge Grille. (**Fig. 5**)
- Removing the right and left screws. (**Fig. 5**)
- Then remove the Control Board by pressing down the hook at the left and pushing up the right hook. (**Fig. 5**)
- Release the Fan Motor leadwire by pressing the hook at the center of the connector. (**Fig. 6**)
- Remove the screw at the Cross Flow Fan. (**Fig. 7**)
- REMINDER - To reinstall the Fan Motor, adjust the connector of the Fan Motor as shown in the **Fig. 7**.

Fig. 5

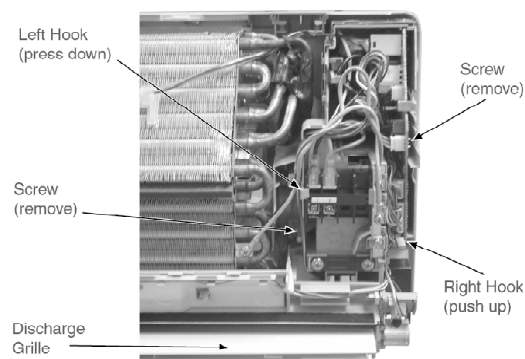


Fig. 6

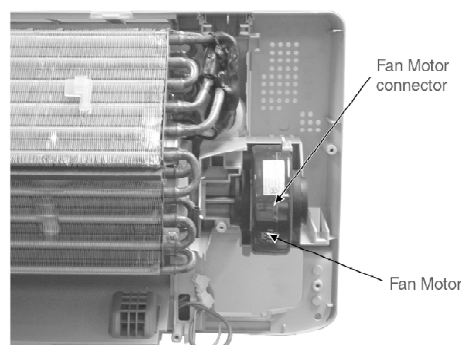
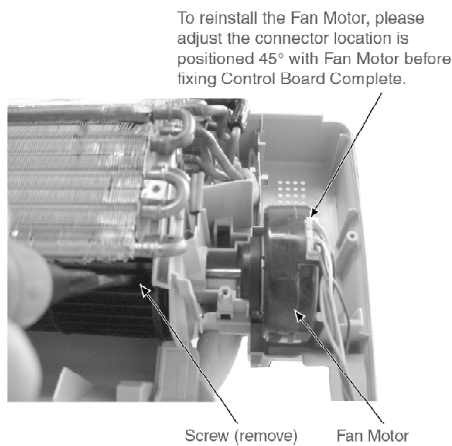


Fig. 7



- Remove the screws at the left of the Evaporator. (**Fig. 8**)
- Remove the Bearing. (**Fig. 9**)
- Push up the Evaporator and pull out the Cross Flow Fan from shaft. By then, Fan Motor can be taken out. (**Fig. 9**)

Fig. 8

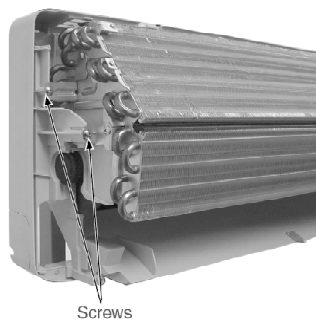
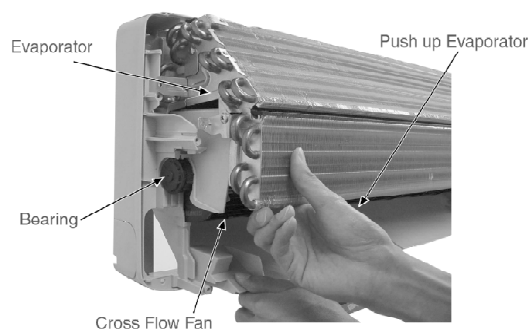


Fig. 9



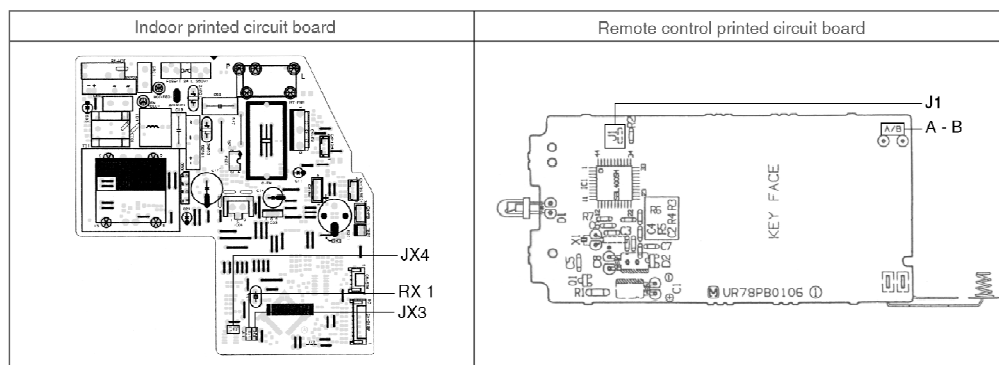
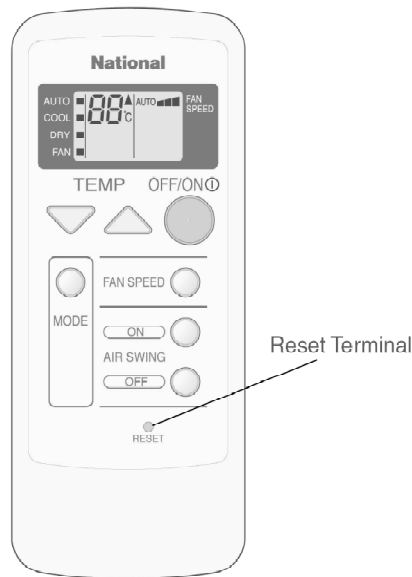
- Remote Control Reset

When the batteries are inserted for the first time, or the batteries are replaced, all the indications will blink and the remote control might not work.

If this happen, you will find a resetting terminal, and by shorting it with a minus screwdriver, it will return to normal.

- Changing the wireless remote control transmission code

When two indoor units are installed in the same room, in order to prevent operating errors caused by using two remote controls, cut a jumper wire at the remote control printed circuit board (A - B) and cut a jumper wire at the indoor printed circuit board (JX4). It is possible to select from 4 types of transmission codes including one at time of delivery condition (0).



	Remote control printed circuit board		Indoor printed circuit board			Note
	A - B	J1	JX3	JX4	RX 1	
0	SHORT	OPEN	SHORT	SHORT	—	At product delivery
1	OPEN	OPEN	SHORT	OPEN	—	
2	SHORT	SHORT	OPEN	OPEN	10 KΩ	
3	OPEN	SHORT	SHORT	OPEN	10 KΩ	

14. Troubleshooting Guide

14.1. Refrigeration cycle system

In order to diagnose malfunctions, make sure that there are no electrical problems before inspecting the refrigeration cycle. Such problems include insufficient insulation, problem with

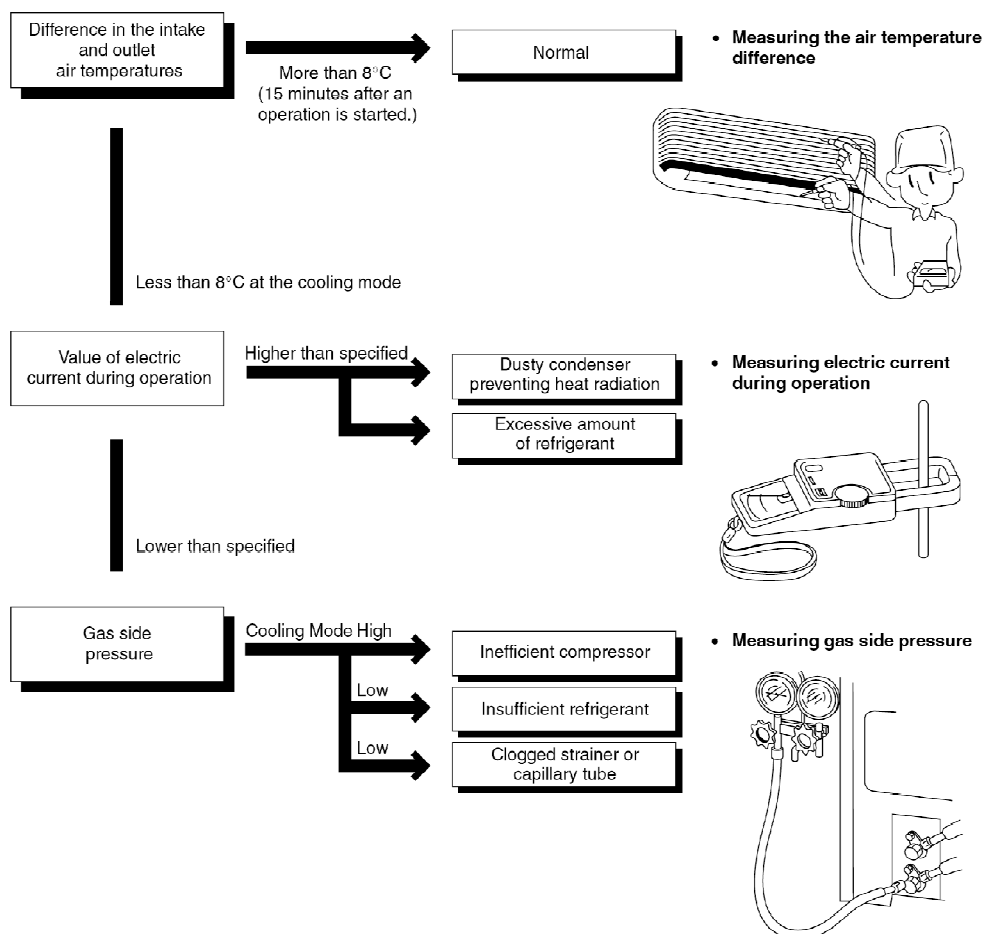
the power source, malfunction of a compressor and a fan.

The normal outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard values for them are shown in the table to the right.

Normal Pressure and Outlet Air Temperature (Standard)

	Gas pressure Mpa (kg/cm ² G)	Outlet air temperature (°C)
Cooling Mode	0.4 ~ 0.6 (4 ~ 6)	12 ~ 16

* Condition: Indoor fan speed; High
Outdoor temperature: 35°C



14.1.1. Relationship between the condition of the air conditioner and pressure and electric current

Condition of the air conditioner	Cooling Mode		
	Low Pressure	High Pressure	Electric current operation
Insufficient refrigerant (gas leakage)			
Clogged capillary tube or Strainer			
Short circuit in the indoor unit			
Heat radiation deficiency of the outdoor unit			
Inefficient compression			

- Carry out the measurements of pressure, electric current, and temperature fifteen minutes after an operation is started.

14.1.2. Diagnosis methods of a malfunction of a compressor

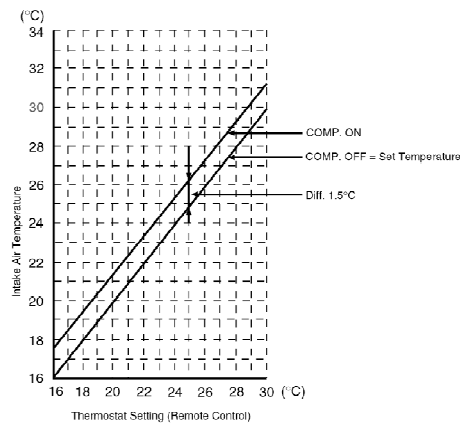
Nature of fault	Symptom
Insufficient compressing of a compressor	-Electric current during operation becomes approximately 20% lower than the normal value. -The discharge tube of the compressor becomes abnormally hot (normally 70 to 90°C). -The difference between high pressure and low pressure becomes almost zero.
Locked compressor	-Electric current reaches a high level abnormally, and the value exceeds the limit of an ampere. In some cases, a breaker turns off. -The compressor has a humming sound.

15. Technical Data

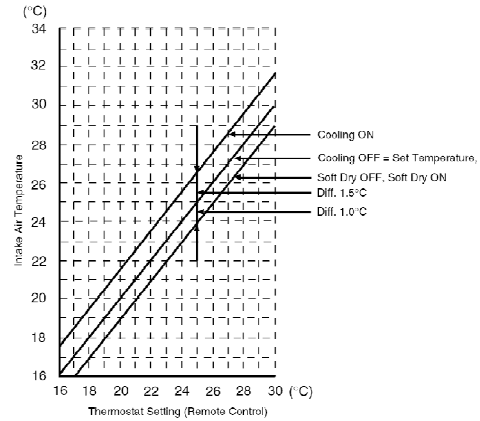
■ Thermostat characteristics

CS-PC9CKN, CS-PC12CKN

• Cooling

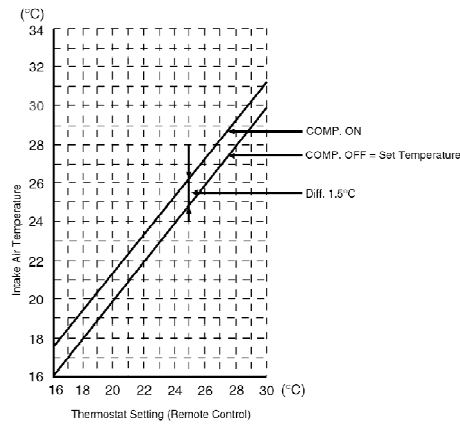


• Soft Dry



CS-SC9CKN, CS-SC12CKN

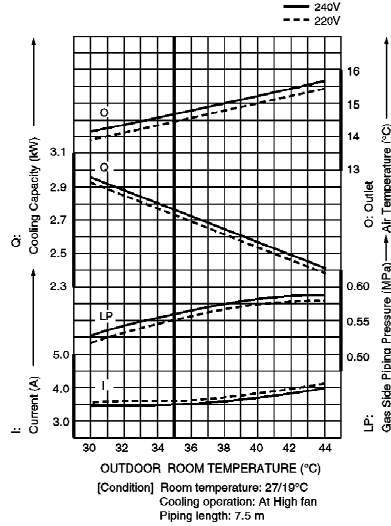
• Cooling



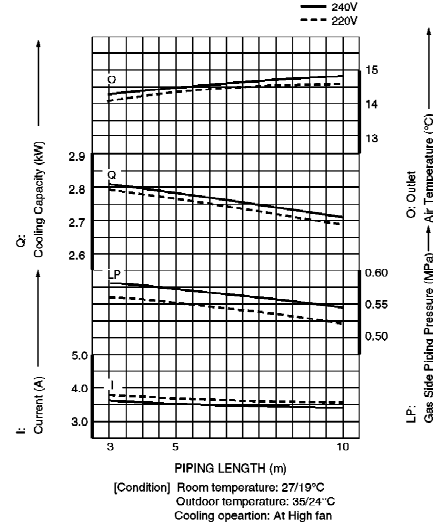
■ Operation characteristics

CS-PC9CKN / CU-PC9CKN5
CS-SC9CKN / CU-PC9CKN5

• Cooling Characteristic

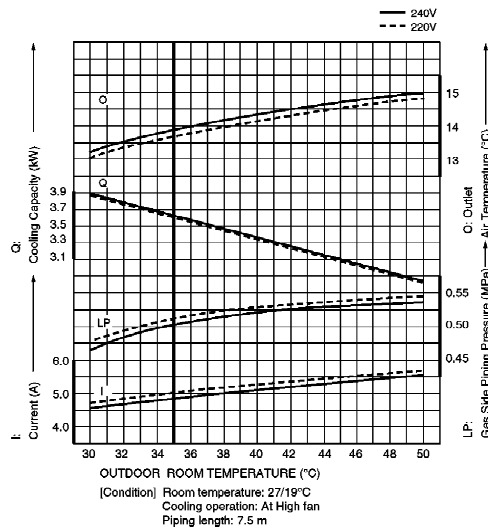


• Piping Length Characteristic

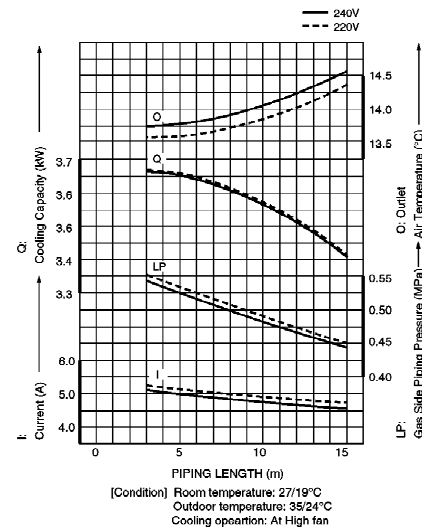


CS-PC12CKN / CU-PC12CKN5
CS-SC12CKN / CU-PC12CKN5

• Cooling Characteristic

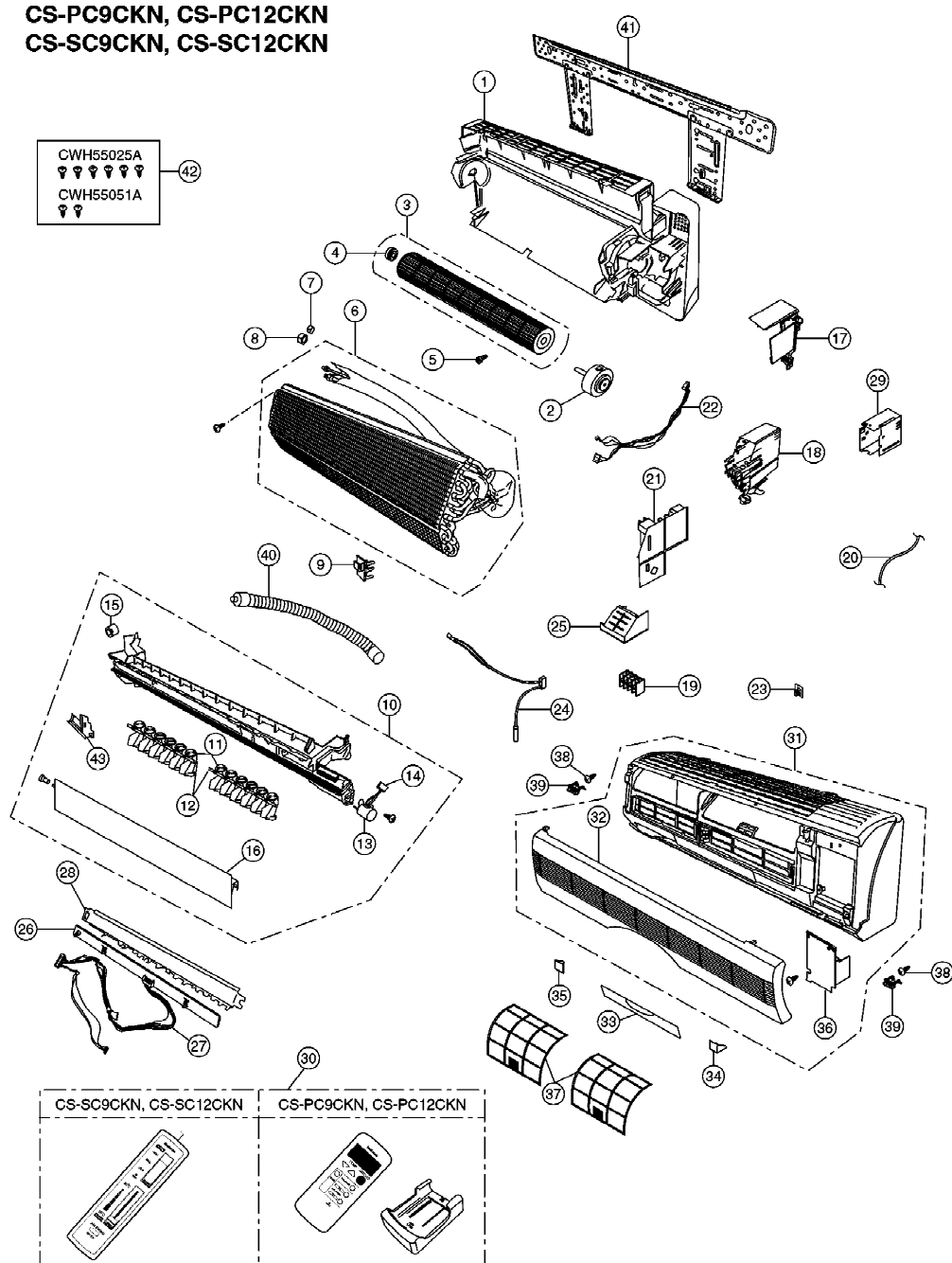


• Piping Length Characteristic



16. Exploded View

CWH55025A
CWH55051A



The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

<Model: CS-PC9CKN, CS-PC12CKN, CS-SC9CKN, CS-SC12CKN>

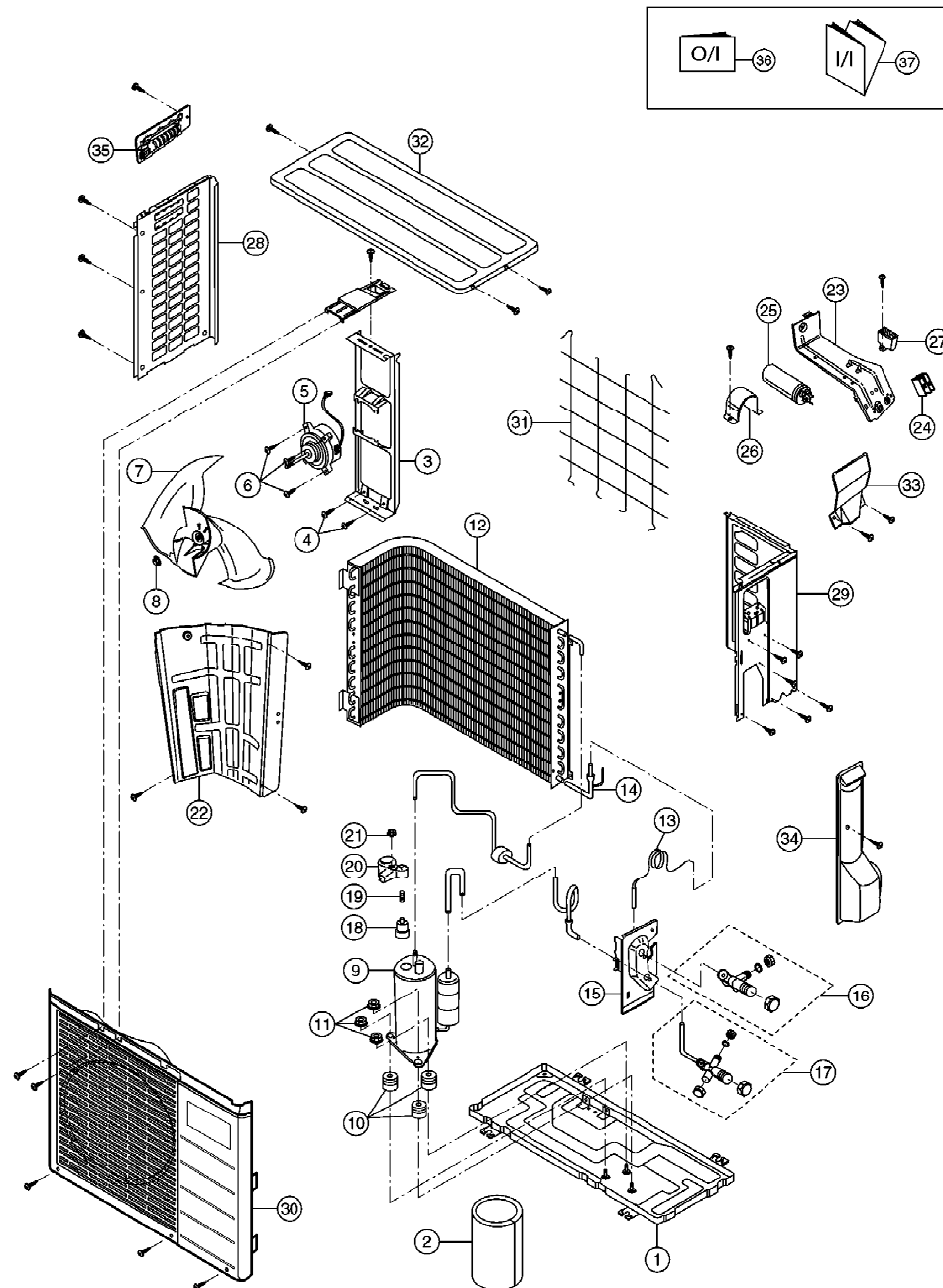
REF. NO.	PART NAME & DESCRIPTION	QTY.	CS-PC9CKN	CS-SC9CKN
1	CHASSY COMPLETE	1	CWD50C1240	←
2	FAN MOTOR	1	CWA921060	←
3	CROSS FLOW FAN COMPLETE	1	CWH02C1012	←
4	BEARING ASS'Y	1	CWH64K007	←
5	SCREW - CROSS FLOW FAN	1	CWH4580304	←
6	EVAPORATOR	1	CWB30C1224	←
7	FLARE NUT	1	CWH6002140 (1/4")	←
8	FLARE NUT	1	CWT25005 (3/8")	←
9	INTAKE AIR SENSOR HOLDER	1	CWH32142	←
10	DISCHARGE GRILLE COMPLETE	1	CWE20C2101	←
11	VERTICAL VANE	12	CWE241068	←
12	CONNECTING BAR	2	CWE261024	←
13	AIR SWING MOTOR	1	CWA98259	←
14	LEAD WIRE - AIR SWING MOTOR	1	CWA67C3977	←
15	CAP - DRAIN TRAY	1	CWH52C1001	←
16	HORIZONTAL VANE	1	CWE241070	←
17	PARTICULAR PIECE	1	CWD932162	←
18	CONTROL BOARD	1	CWH102103	←
19	TERMINAL BOARD COMPLETE	1	CWA28C2073	←
20	POWER SUPPLY CORD	1	CWA20C2158	←
21	ELECTRONIC CONTROLLER - MAIN	1	CWA743090	CWA743088
22	LEAD WIRE - FAN MOTOR	1	CWA67C3729	←
23	ELECTRONIC CONTROLLER - RECEIVER	1	CWA73C1124	-
24	SENSOR COMPLETE	1	CWA50C2122	←
25	CONTROL BOARD FRONT COVER	1	CWH131090	←
26	ELECTRONIC CONTROLLER - INDICATOR	1	CWE39C1076	CWE39C1077
27	LEAD WIRE - INDICATOR	1	CWA67C4546	CWA67C4547
28	INDICATOR HOLDER	1	CWD932163	←
29	CONTROL BOARD TOP COVER	1	CWH131091	←
30	REMOTE CONTROL COMPLETE	1	CWA75C2373	CWA75C2369
31	FRONT GRILLE COMPLETE	1	CWE11C2329	CWE11C2682
32	INTAKE GRILLE	1	CWE22C1092	←
33	CONTROL PANEL	1	CWE312329	←
34	DECORATION BASE (R)	1	CWE351067	←
35	DECORATION BASE (L)	1	CWE351068	←
36	GRILLE DOOR	1	CWE141033	←
37	AIR FILTER	2	CWD001047	←
38	SCREW - FRONT GRILLE	2	XTN4+16C	←
39	CAP - FRONT GRILLE	2	CWH521062	←
40	DRAIN HOSE	1	CWH85285	←
41	INSTALLATION PLATE	1	CWH36K1006	←
42	BAG COMPLETE - INSTALLATION SCREW	1	CWH82C067	←
43	FULCRUM	1	CWH621013	←

(Note)

- All parts are supplied from MAICO, Malaysia (Vendor Code: 061).
- “O” marked parts are recommended to be kept in stock.

18. Exploded View

CU-PC9CKN5, CU-PC12CKN5



Note:

The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

19. Replacement Parts List

<Model: CU-PC9CKN5, CU-PC12CKN5>

REF. NO.	PART NAME & DESCRIPTION	QTY.	CU-PC9CKN5	CU-PC12CKN5	REMARKS
1	CHASSY ASS'Y	1	CWD50K2071	CWD50K2072	
2	SOUND PROOF MATERIAL	1	CWG302152	-	
3	FAN MOTOR BRACKET	1	CWD541030	←	
4	SCREW - FAN MOTOR BRACKET	2	CWD55413	←	
5	FAN MOTOR	1	CWA951221	←	0
6	SCREW - FAN MOTOR MOUNT	3	CWH55406	←	
7	PROPELLER FAN ASS'Y	1	CWH03K1006	←	
8	NUT - PROPELLER FAN	1	CWH56053	←	
9	COMPRESSOR	1	QK156PAA	QJ208PAA	0
10	ANTI - VIBRATION BUSHING	3	CWH501024	←	
11	NUT - COMPRESSOR MOUNT	3	CWH56000	CWH4582065	
12	CONDENSER	1	CWB32C1236	CWB32C1237	
13	TUBE ASS'Y (CAPILLARY TUBE)	1	CWB15K1082	CWB15K1090	
14	STRAINER	1	CWB11025	←	
15	HOLDER COUPLING ASS'Y	1	CWH351023	←	
16	2-WAY VALVE (LIQUID)	1	CWB021077	←	0
17	3-WAY VALVE (GAS)	1	CWB011104	CWB011105	0
18	OVERLOAD PROTECTOR	1	CWA121110	CWA121057	0
19	HOLDER - O.L.P.	1	-	-	
20	TERMINAL COVER	1	CWH171021	←	
21	NUT - TERMINAL COVER	1	CWH561020	←	
22	SOUND PROOF BOARD	1	CWH151023	←	
23	CONTROL BOARD	1	CWH102102	←	
24	TERMINAL BOARD ASS'Y	1	CWA28K1033	←	
25	CAPACITOR - COMPRESSOR	1	CWA312076 (30F, 400VAC)	←	0
26	HOLDER CAPACITOR	1	CWH30057	←	
27	CAPACITOR - FAN MOTOR	1	CWA31618 (2.0 μ F, 450VAC)	←	0
28	CABINET SIDE PLATE (L)	1	CWE041031A	←	
29	CABINET SIDE PLATE (R)	1	CWE041033A	←	
30	CABINET FRONT PLATE	1	CWE06K1034	←	
31	WIRE NET	1	CWD04C1011	←	
32	CABINET TOP PLATE	1	CWE031014A	←	
33	PLATE - C. B. COVER	1	CWH131088	←	
34	CONTROL BOARD COVER	1	CWH131092	←	
35	HANDLE	1	CWE161010	←	
36	OPERATION INSTRUCTIONS	1	CWF563857	←	
37	INSTALLATION INSTRUCTIONS	1	CWF612368	←	

(Note)

- All parts are supplied from MAICO, Malaysia (Vendor Code: 061).

- “O” marked parts are recommended to be kept in stock.

20. Electronic Circuit Diagram

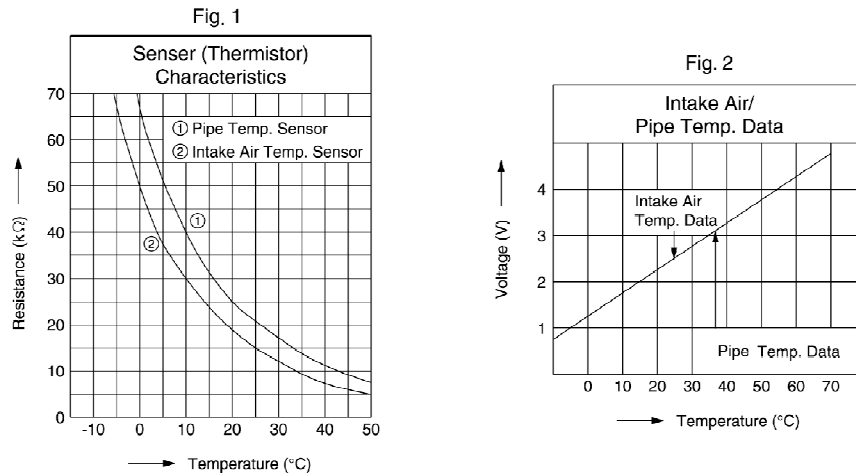
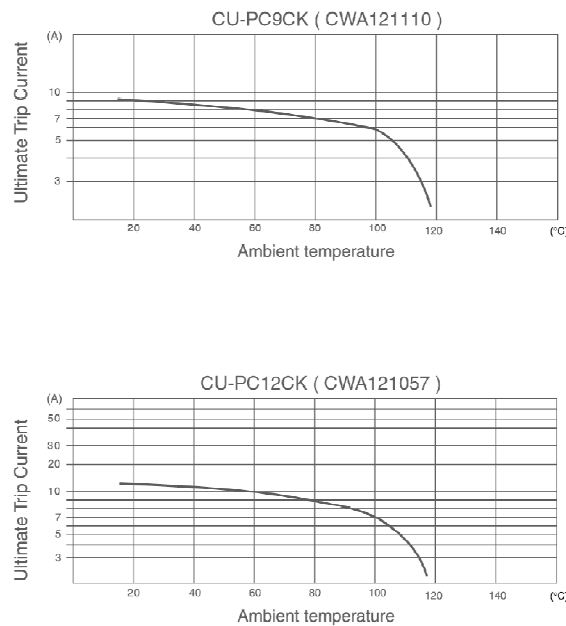


Fig. 3 OLP Characteristics (Compressor)



How to use electronic circuit diagram

Before using the circuit diagram, read the following carefully.

* Voltage measurement

Voltage has been measured with a digital tester when the indoor fan is set at high fan speed under the following conditions without setting the timer.

Use them for servicing.

Voltage indication is in Red at all operations.

	Intake air temperature	Temperature setting	Discharge air temperature	Pipe temperature
Cooling	27°C	16°C	17°C	15°C

* Indications for resistance

- a. K....kΩ M....MΩ
W...watt Not indicated....1/4W

b. Type

Not indicated.....carbon resistor

Tolerance±5%



.....metal oxide resistor

Tolerance±1%

* Indications for capacitor

- a. Unit μ....μF P....pF
b. Type Not indicated....ceramic capacitor
(S).....S series aluminium electrolytic capacitor
(Z).....Z series aluminium electrolytic capacitor
(SU).....SU series aluminium electrolytic capacitor
(P).....P series polyester system
(SXE).....SXE series aluminium electrolytic capacitor
(SRA).....SRA series aluminium electrolytic capacitor
(KME).....KME series aluminium electrolytic capacitor

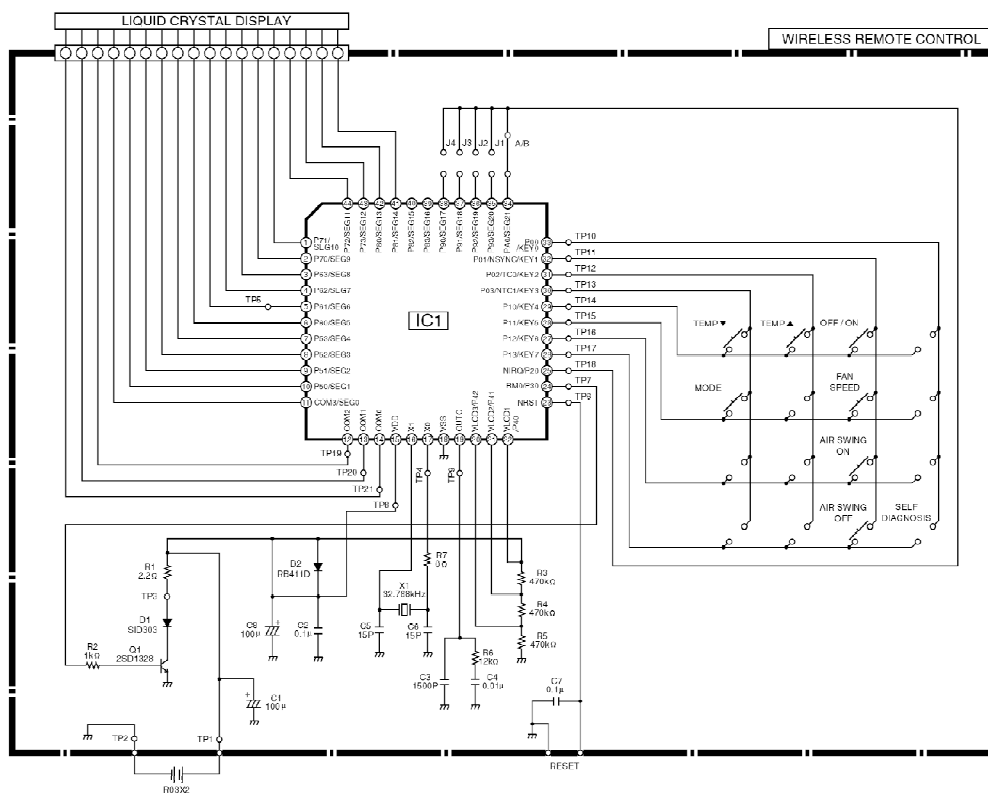
* Diode without indication.....MA165

* Circuit Diagram is subject to change without notice for further development.

TIMER TABLE

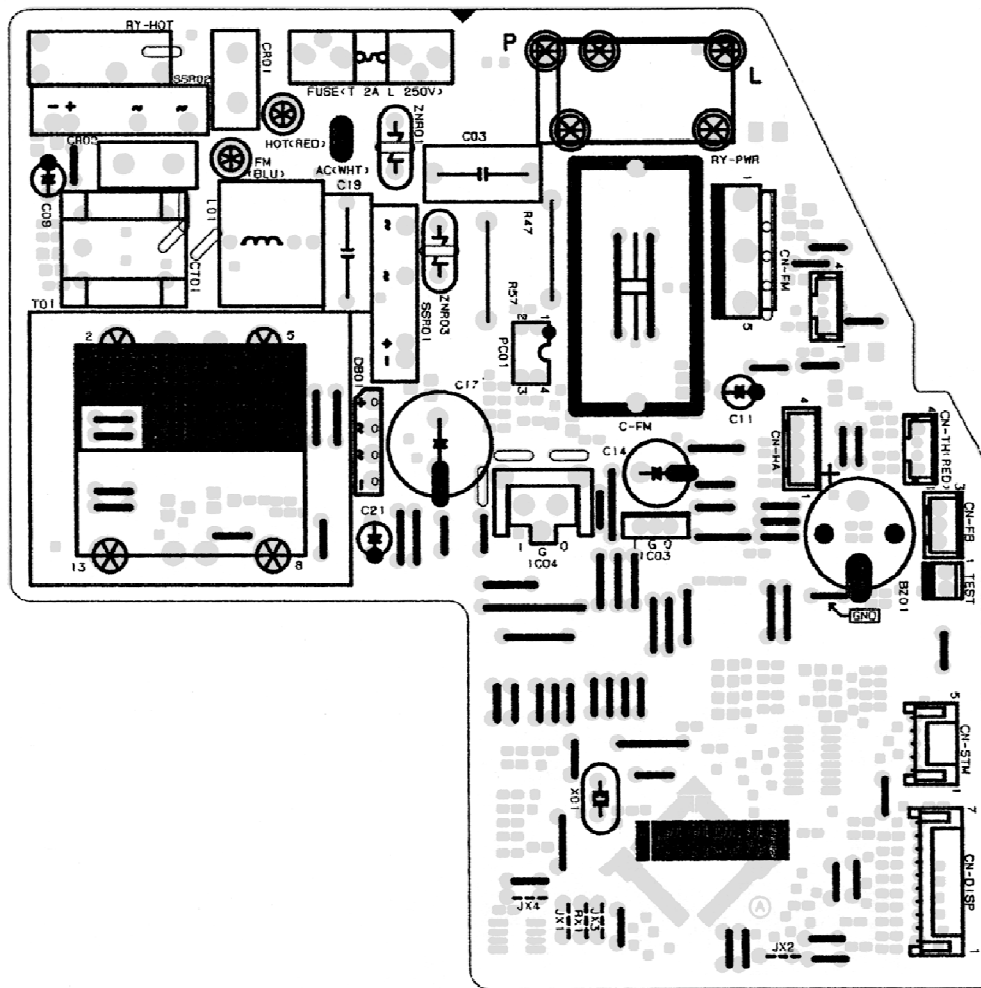
Name		Time	Test Mode (When test point Short-circuited)	Remarks
Real Timer		1 hr.	1 min.	
		10 min.	10 sec.	
		1 min.	1 sec.	
Time Delay Safety Control		2 min. 58 sec.	0 sec.	
Forced Operation		60 sec.	0 sec.	
Time Save Control		7 min.	4.2 sec.	
Anti-Freezing		4 min.	0 sec.	
Auto Mode Judgement		20 sec.	0 sec.	
Comp. Reverse Rotation Detection		5 min.	30 sec.	Comp. ON 5 min. and above
		2 min.	0 sec.	
Random Auto Restart Control		0 ~ 62 sec.	0 ~ 6.2 sec.	
Comp. / Fan Motor Delay Timer		1.6 sec.	0 sec.	
Soft Dry	OFF	6 min.	36 sec.	
	ON	10 min.	60 sec.	Soft Dry : 10 min. operation

20.1. REMOTE CONTROL / /

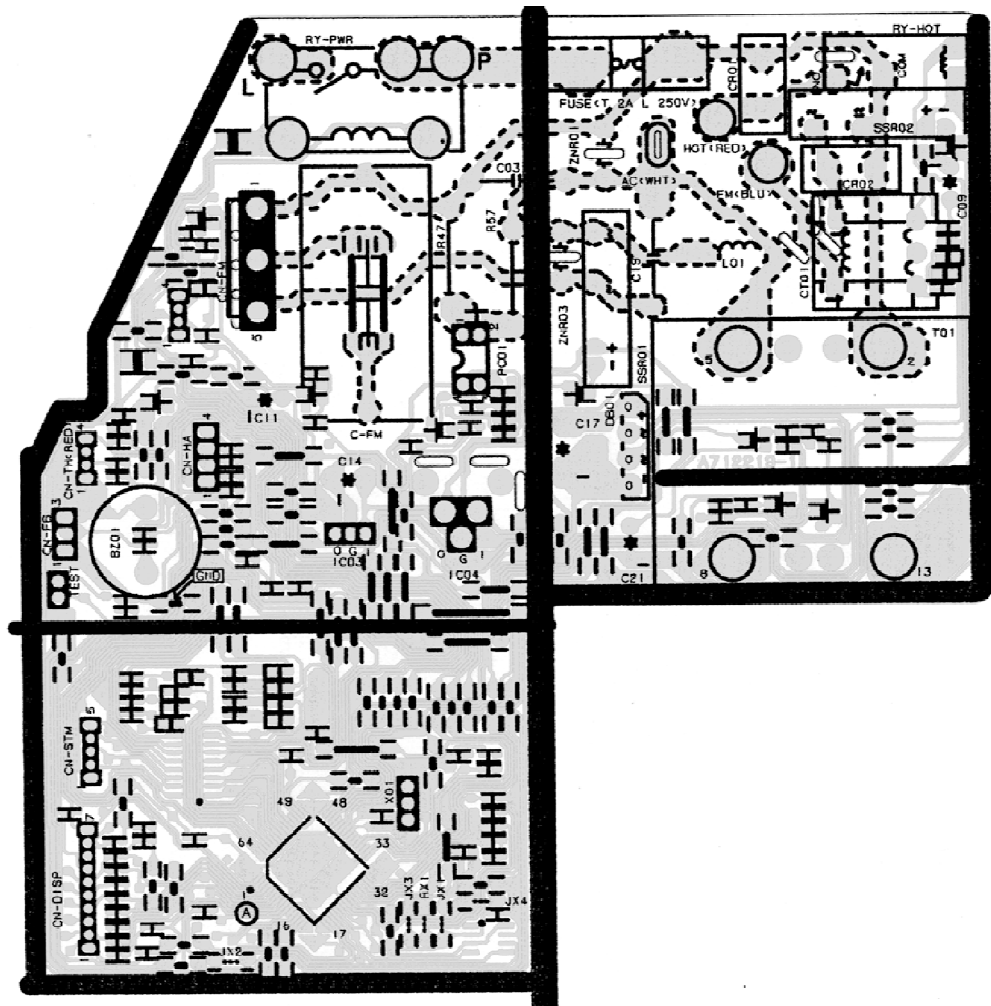


	A - B	J1
0	SHORT	OPEN
1	OPEN	OPEN
2	SHORT	SHORT
3	OPEN	SHORT

20.2. PRINT PATTERN / INDOOR UNIT PRINTED CIRCUIT BOARD / / / TOP VIEW



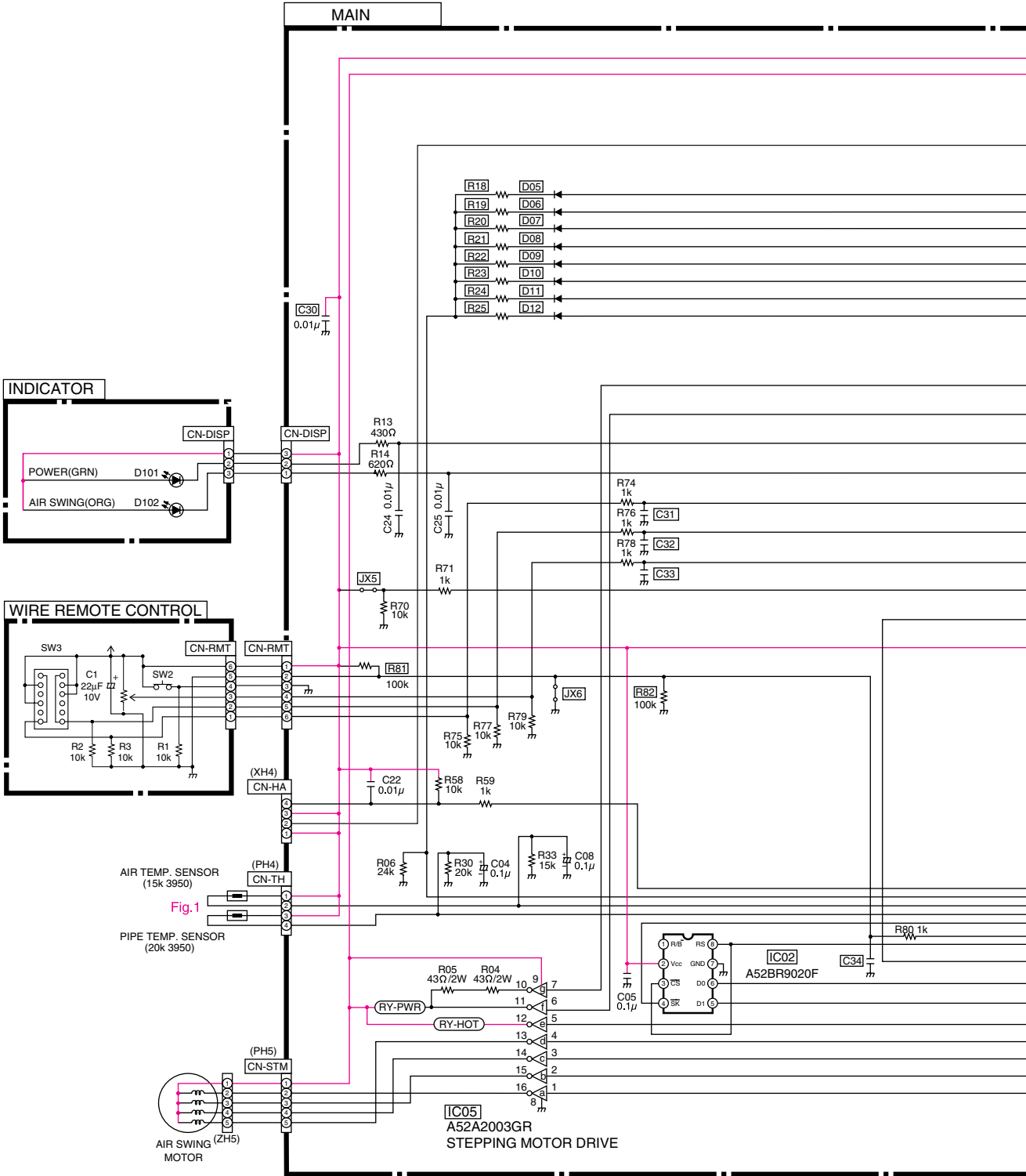
20.3. PRINT PATTERN / INDOOR UNIT PRINTED CIRCUIT BOARD / / / BOTTOM VIEW



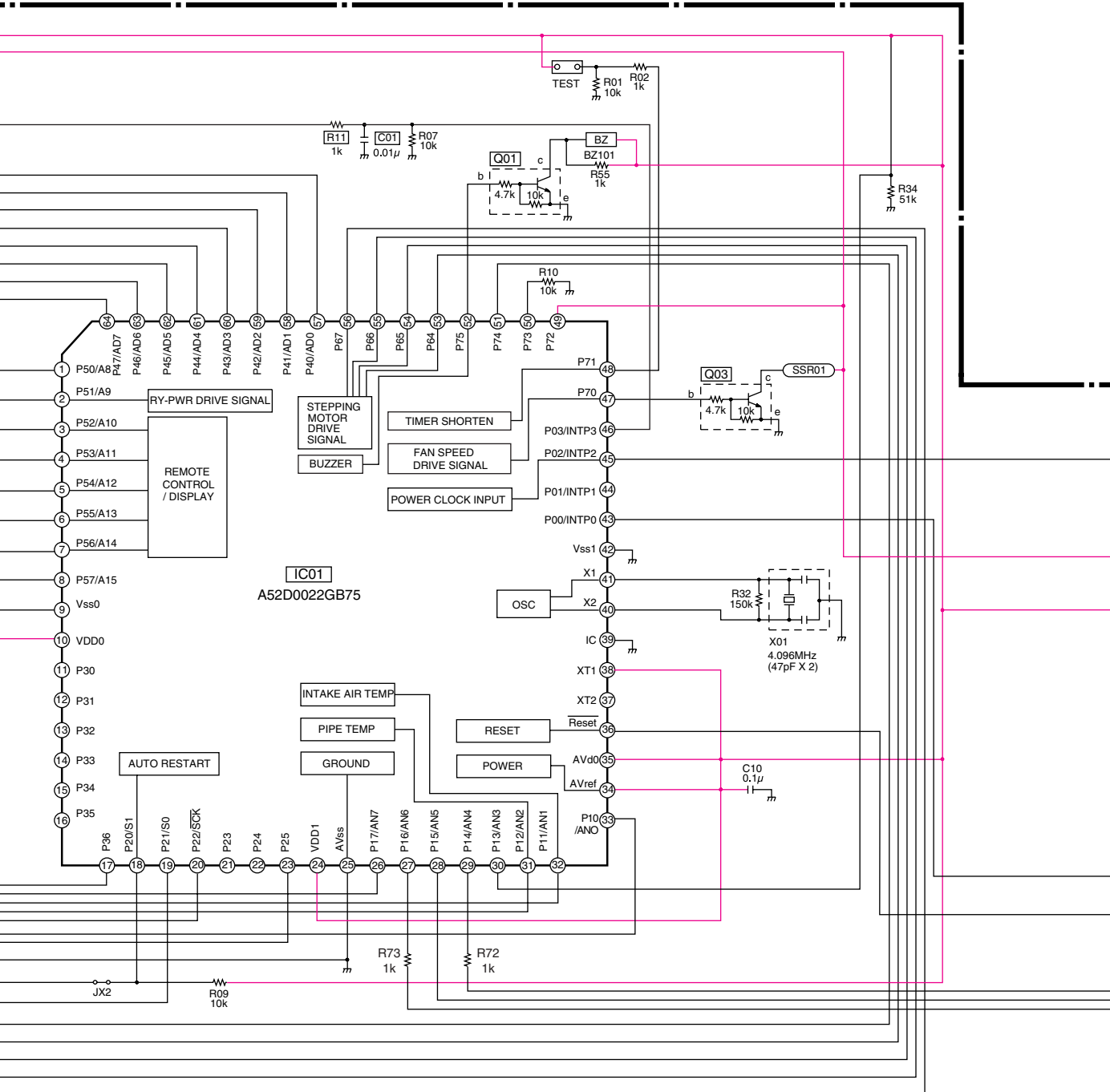
[MAICO] Printed in Malaysia /

- CS-SC9CK / CU-PC9CK
- CS-SC12CK / CU-PC12CK

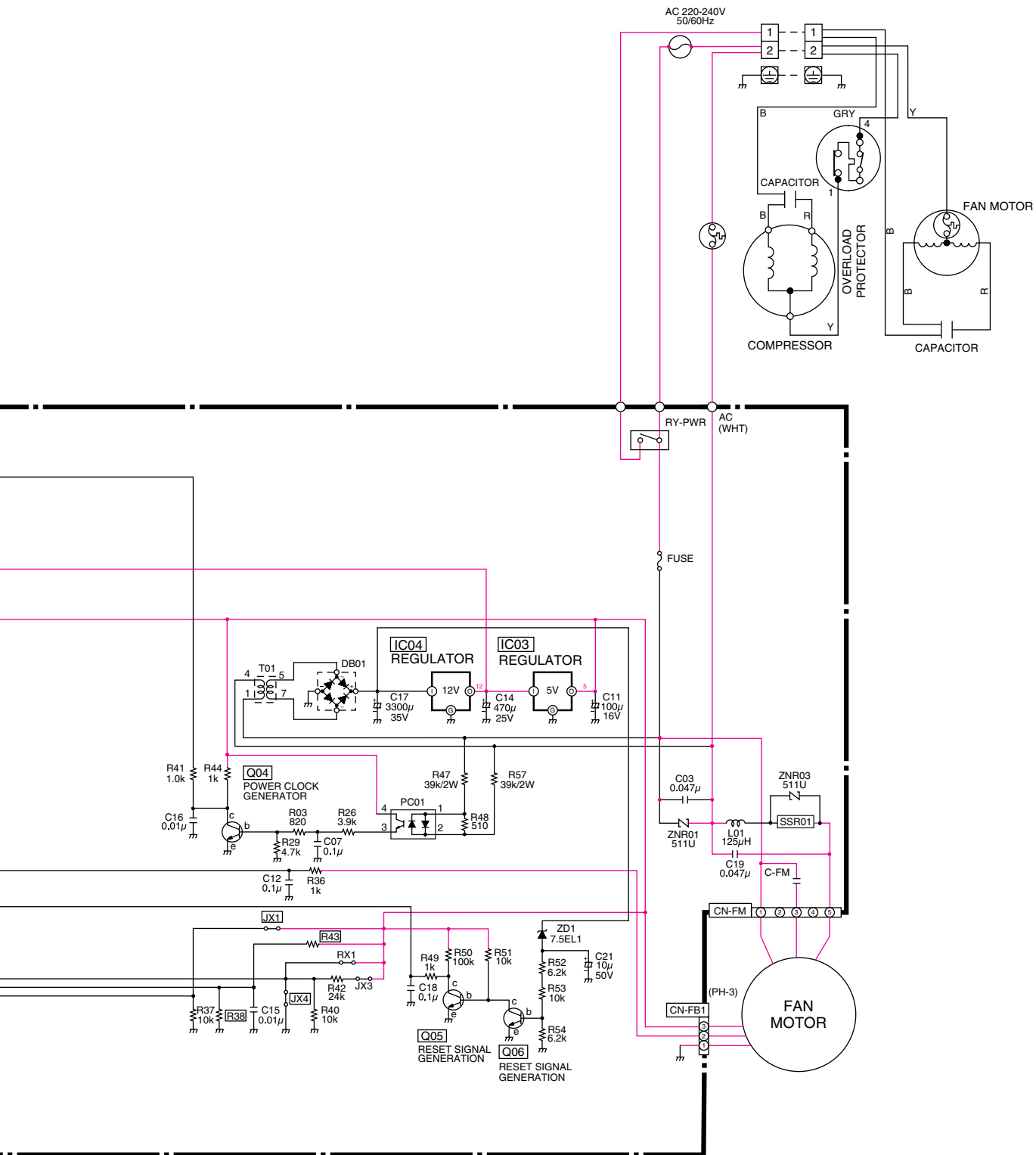
SCHEMATIC DIAGRAM 1/3



SCHEMATIC DIAGRAM 2/3

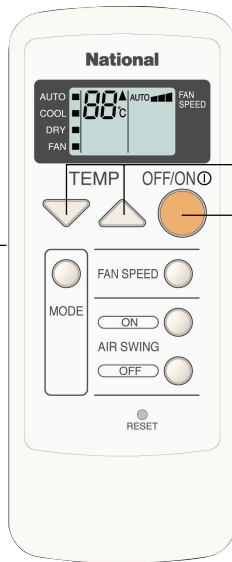


SCHEMATIC DIAGRAM 3/3



Remote Control

CS-PC9CKN
CS-PC12CKN



Self illuminating
button

OFF / ON

Operation OFF / ON

MODE

Operation Mode Selection

- AUTO Automatic Operation Mode
- COOL Cooling Operation Mode
- DRY Soft Dry Operation Mode
- FAN Air Circulation Mode

FAN SPEED

Indoor Fan Speed Selection

- Low Fan Speed
- Medium Fan Speed
- High Fan Speed
- AUTO Automatic Fan Speed

AIR SWING

Vertical Airflow Direction Control

- ON Air Swing is in operation
- OFF Stop the operation of the Air Swing

TEMP.

Room Temperature Setting

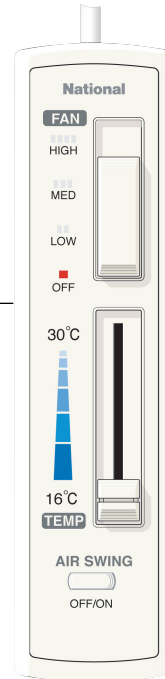
Cooling, Soft Dry, Air Circulation Operation.

- Temperature Setting (16°C to 30°C)

Automatic Operation

- Operation with 2°C higher than standard temperature.
- Operation with standard temperature.
- Operation with 2°C lower than standard temperature.

CS-SC9CKN
CS-SC12CKN



FAN

Operation Switch

- OFF Stops all operation
- LOW Operate in Low Fan Speed
- MED Operate in Medium Fan Speed
- HIGH Operate in High Fan Speed

TEMP

Cooling Temperature Setting Control

- Upward – High Temp. (less cool)
 - Downward – Low Temp. (more cool)
- (Cooling Temperature setting: 16°C ~ 30°C)

AIR SWING

Air Swing Selection Button

- ON Swing automatically
- OFF Stop the operation of the Air Swing

Indoor Unit

CS-PC9CKN
CS-PC12CKN



AUTO
OFF / ON

Automatic Operation Button

- Press for < 5s to operate Automatic operation mode.
(Used when the remote control cannot be used.)
- Press continuously for 5s or < 10s to operate Test Run/Pump down. “Beep” sound will be heard at the 5th second.
(Used when test running or servicing.)
- Press continuously for 10s and above to omit or resume the remote control signal receiving sound. “Beep, beep” sound will be heard at the 10th second.

Operation Indication Lamps (LED)

- POWER (Green) Lights up in operation, blinks in Automatic Operation Mode judging.
- AIR SWING (Orange) .. Lights up in AIR SWING Operation.

Operation Mode

- Cooling, Soft Dry, Air Circulation and Automatic Mode.

Random Auto Restart Control

- Operation is restarted randomly after power failure at previous setting mode.

Anti-Freezing Control

- Anti-Freezing control for indoor heat exchanger. (Cooling and Soft Dry)

Indoor Fan Speed Control

- High, Medium and Low.
- Automatic Fan Speed Mode
 - Cooling : Fan rotates at Hi, Me and SLo speed.
 - Soft Dry: Fan rotates at Lo- speed.

Airflow Direction Control

- Automatic air swing selected by remote control for vertical airflow.
- Manually adjusted by hand for horizontal airflow.

Starting Current Control

- Fan motor is delayed for 1.6 seconds when compressor starts simultaneously.

Time Delay Safety Control

- Restarting is inhibited for approx. 3 minutes.

7 Minutes Time Save Control

- Cooling Operation only.

Indoor Unit

CS-SC9CKN
CS-SC12CKN



Operation Indication Lamps (LED)

- POWER (Green) Lights up in operation.
- AIR SWING (Orange) .. Lights up in AIR SWING Operation.

Operation Mode

- Cooling Mode.

Indoor Fan Speed Control

- High, Medium and Low.

Random Auto Restart Control

- Operation is restarted randomly after power failure at previous setting mode.

Anti-Freezing Control

- Anti-Freezing control for indoor heat exchanger. (Cooling)

Airflow Direction Control

- Automatic air swing selected by remote control for vertical airflow.
- Manually adjusted by hand for horizontal airflow.

Starting Current Control

- Fan motor is delayed for 1.6 seconds when compressor starts simultaneously.

Time Delay Safety Control

- Restarting is inhibited for approx. 3 minutes.

7 Minutes Time Save Control

- Cooling Operation only.

Outdoor Unit

CU-PC9CKN5

CU-PC12CKN5



Compressor Reverse Rotation Protection Control

- To protect compressor from reverse rotation when there is a instantaneous power failure.

Overload Protector

- 2-Stage OLP to protect the compressor. Overload Protector will trip when
 - Temperature of compressor increases to 120°C.
 - High temperature or high current flows to compressor.
(Refer circuit diagram for OLP characteristic)

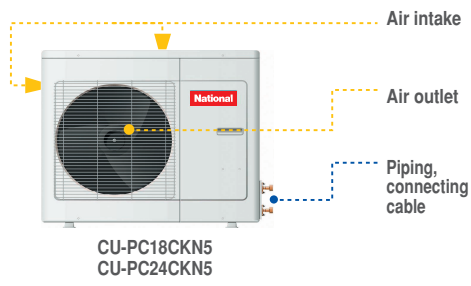
60 Secs. Forced Operation Control

- Once the compressor is activated, it does not stop within the first 60 secs. However, it stops immediately with remote control stop signal.

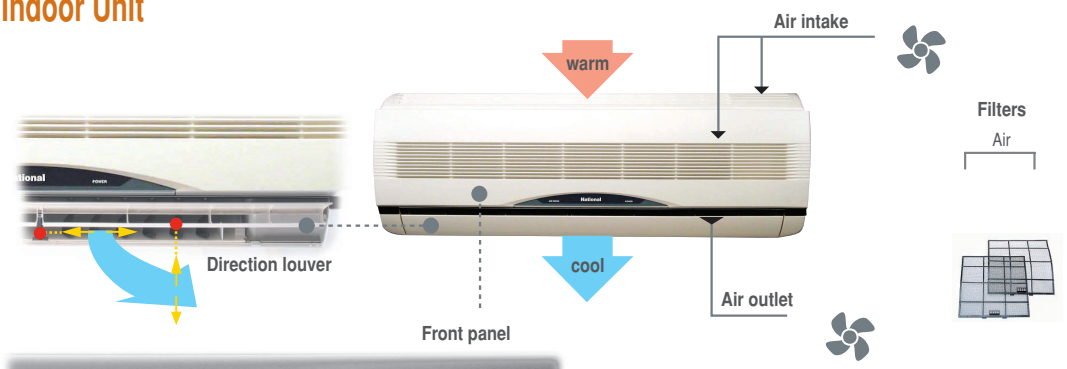
Outdoor Fan Operation Control

- Temperature Fuse.

Outdoor Unit



Indoor Unit

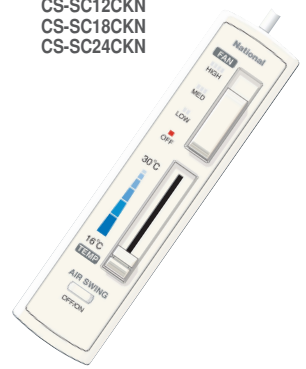


Remote Control

Model : CS-PC9CKN
CS-PC12CKN
CS-PC18CKN
CS-PC24CKN



Model : CS-SC9CKN
CS-SC12CKN
CS-SC18CKN
CS-SC24CKN



- 1-open front panel
- 2-press to START
- 3-press again to STOP

- Remote control signal, maximum distance: 10m
- Some fluorescent lamps may interfere signal transmission



Preparations

Installation: see enclosed installation instruction!

Use ~1 year

Indoor Unit



Plug in

Insert batteries

(Not applicable for model :
CS-SC9CKN, CS-SC12CKN,
CS-SC18CKN, CS-SC24CKN)



Same type!

~~Rechargeable~~



Open / remove



Insert batteries / close

Batteries



HELPFUL INFORMATION

Automatic Operation → see page 28



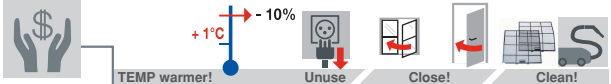
If Remote Control is
malfunction / misplaced

Thunder / Lightning



Built in surge protection BUT UNPLUG in case of very strong lightning!

Save cost!



Power Failure



Upon power resume...

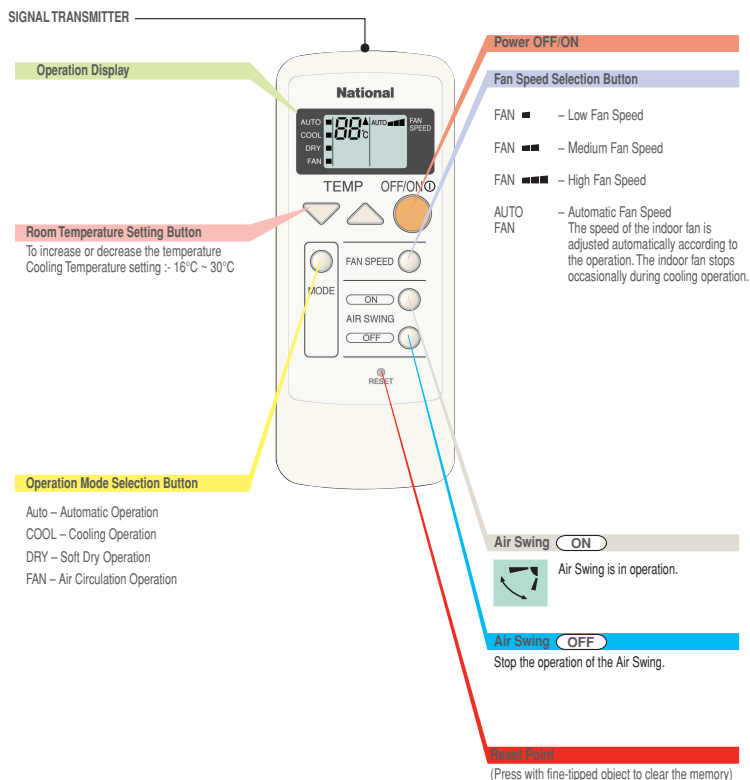
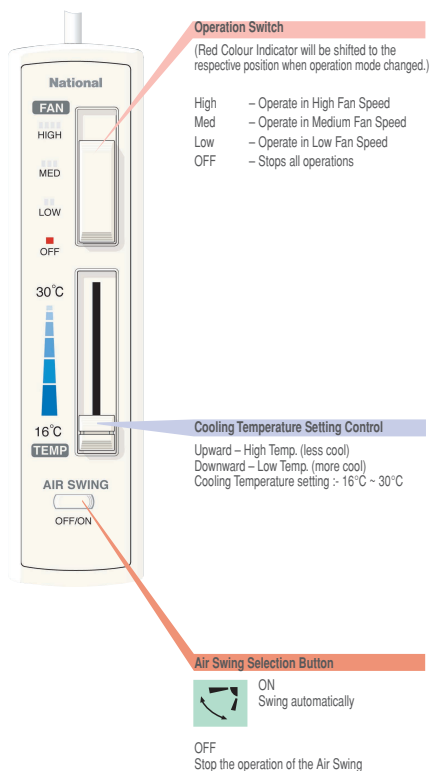
3-4 Min. → RESTART
automatically

- MODE
- AIRFLOW direction ✓ Restored!

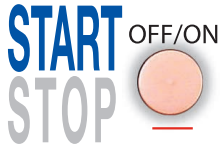
- ~~TIMER~~ deleted → set again!

(Only applicable for model :
CS-SC9CKN, CS-SC12CKN,
CS-SC18CKN, CS-SC24CKN)

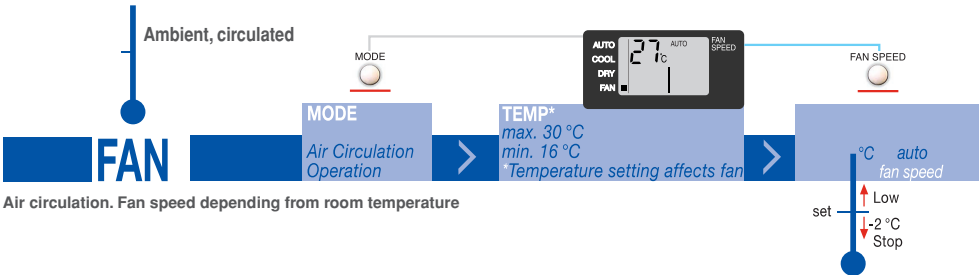
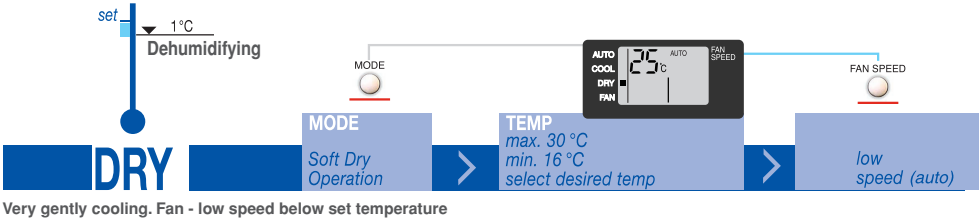
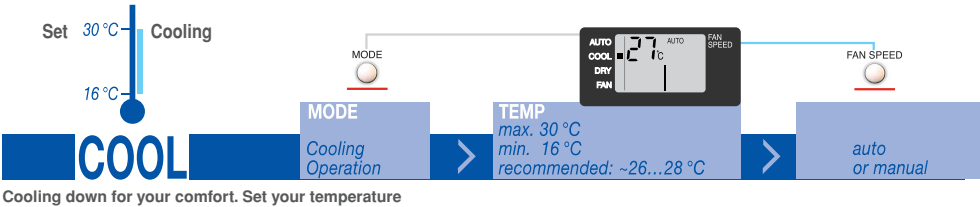
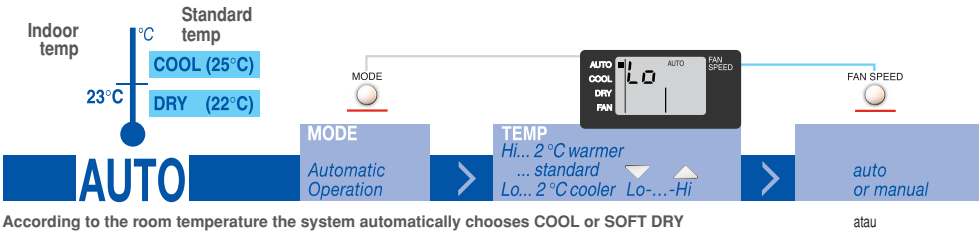
(Only applicable for model :
CS-PC9CKN, CS-PC12CKN,
CS-PC18CKN, CS-PC24CKN)



Additional comfort!



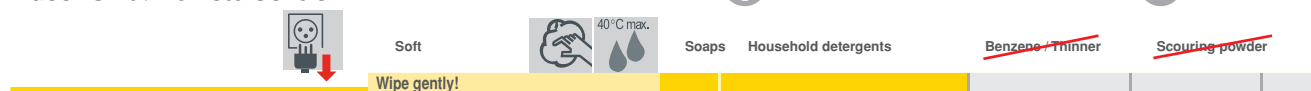
(Not applicable for model : CS-SC9CKN, CS-SC12CKN, CS-SC18CKN, CS-SC24CKN)



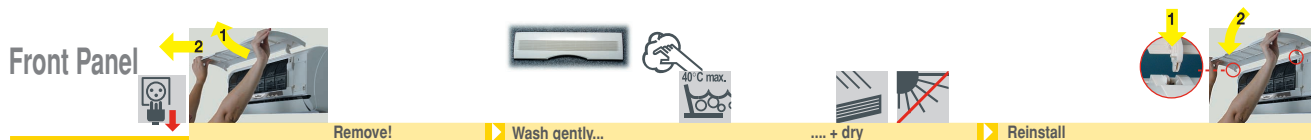
Press button!

CARE & CLEANING

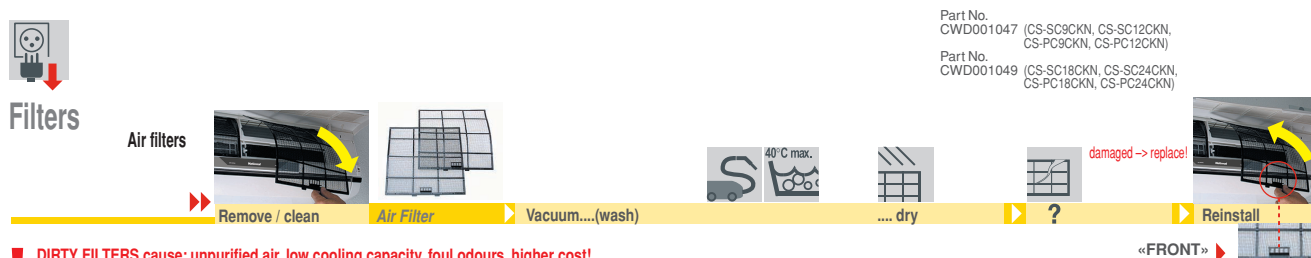
Indoor Unit / Remote Control



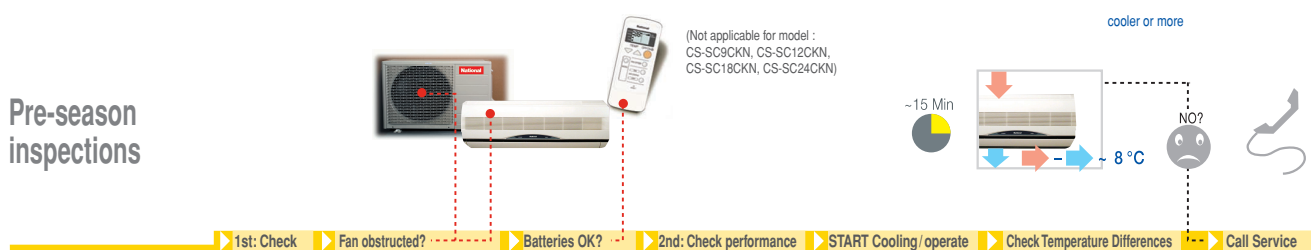
Front Panel



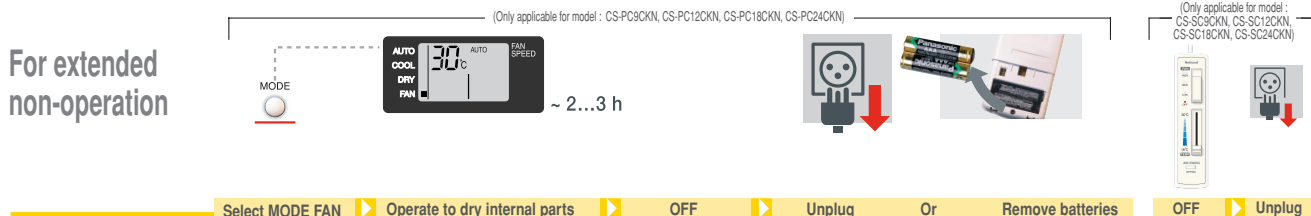
Filters



Pre-season inspections



For extended non-operation



➔ Consult an authorized distributor for inspection!

Recommended Inspections

After several seasons and due to operational conditions, the performance may be reduced by dirt or foul odours may occur.



Troubleshooting

OK?

✓ No problem

- 1 *Operation delayed for 3 minutes after successful restart* ▶ Self protecting procedure ✓
- 2 *It sounds like water flowing...* ▶ Caused by refrigerant flow inside ✓
- 3 *Fog seems to emerge from the indoor unit* ▶ Condensation effect due to cooling ✓
- 4 *With setting «FAN AUTO» indoor fan stops sometimes* ▶ Smell eliminating procedure ✓

(Not applicable for model : CS-SC9CKN,
CS-SC12CKN, CS-SC18CKN, CS-SC24CKN)



- 1 *No Operation* ▶ Circuit breaker tripped? Power plug OK?
- 2 *Noise too loud* ▶ Installation work slanted? Front grille / panel closed properly?
- 3 *Cooling efficiency low* ▶ Temperature set correctly? Windows / doors closed? Outdoor unit obstructed?
Filters cleaned / replaced? Intake / outlet ventilators obstructed?
- 4 *Remote control / display doesn't work* ▶ Batteries empty? Batteries correctly inserted (+) and (-)? See page 2

(Not applicable for model : CS-SC9CKN,
CS-SC12CKN, CS-SC18CKN, CS-SC24CKN)



**TURN OFF - UNPLUG - CALL authorized distributor
IN CASE OF...**

- Abnormal noise during operation
- Water / foreign materials got into Remote Control
- Water leak from Indoor Unit
- Switches / buttons do not operate properly
- Circuit breaker switches off frequently
- Power plug / cord warm up unusually

Manufactured by:
MATSUSHITA INDUSTRIAL CORP. SDN. BHD.
Lot 2, Persiaran Tengku Ampuan, Section 21, Shah Alam
Industrial Site Selangor, Malaysia

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
Web site: <http://www.panasonic.co.jp/global/>





Safety precautions

EMERGENCY!

SOS

Immediately isolate from the mains supply (e.g. in case of burnt smell)

Use only for... Hanya digunakan...



Cooling



Dehumidifying



Air circulation

(Not applicable for model : CS-SC9CKN,
CS-SC12CKN, CS-SC18CKN, CS-SC24CKN)

NEVER use this unit for purposes other than mentioned in these Operating Instructions, especially do not use this unit for preservation etc.

Installation



Install, remove or reinstall never yourself



NOT in potentially explosive atmosphere



Engage dealer / specialist



Connect drain hose properly

Mains connection



Engage dealer / specialist for mains connection including...



Used connectors / breakers easy reachable!



Connect protective earth!



NEVER shared



Plug in properly

Before operating, read the safety precautions thoroughly

Operation!



NEVER for on / off



NEVER modify / damage mains cables or connectors



Do NOT stay long within the cold airstream



Do NOT operate with wet hands



Ventilate the room periodically



Unused for a long time? -> OFF / unplug



Place nothing on the unit -> covered openings may cause overheating / fire



NO fingers or objects into the unit! -> especially dangerous for children!



Do not pull the cord to disconnect



Defective cables / connectors are only to be repaired by authorised dealers / specialists to avoid risk



The appliance is not intended for use by young children or infirm person without supervision. Young children should be supervised to ensure that they do not play with the appliance.

Defects!



Defect / suspicion of defect? → Do NOT use! – attend defects due to long time usage



Do NOT repair yourself



Engage dealer / specialist

Cleaning!



OFF / and unplug (connector or breaker)



Do NOT wash!
JANGAN basuh!

R ~ I

Waste disposal!



Uninstall and disposal of the unit ONLY by dealer / specialists



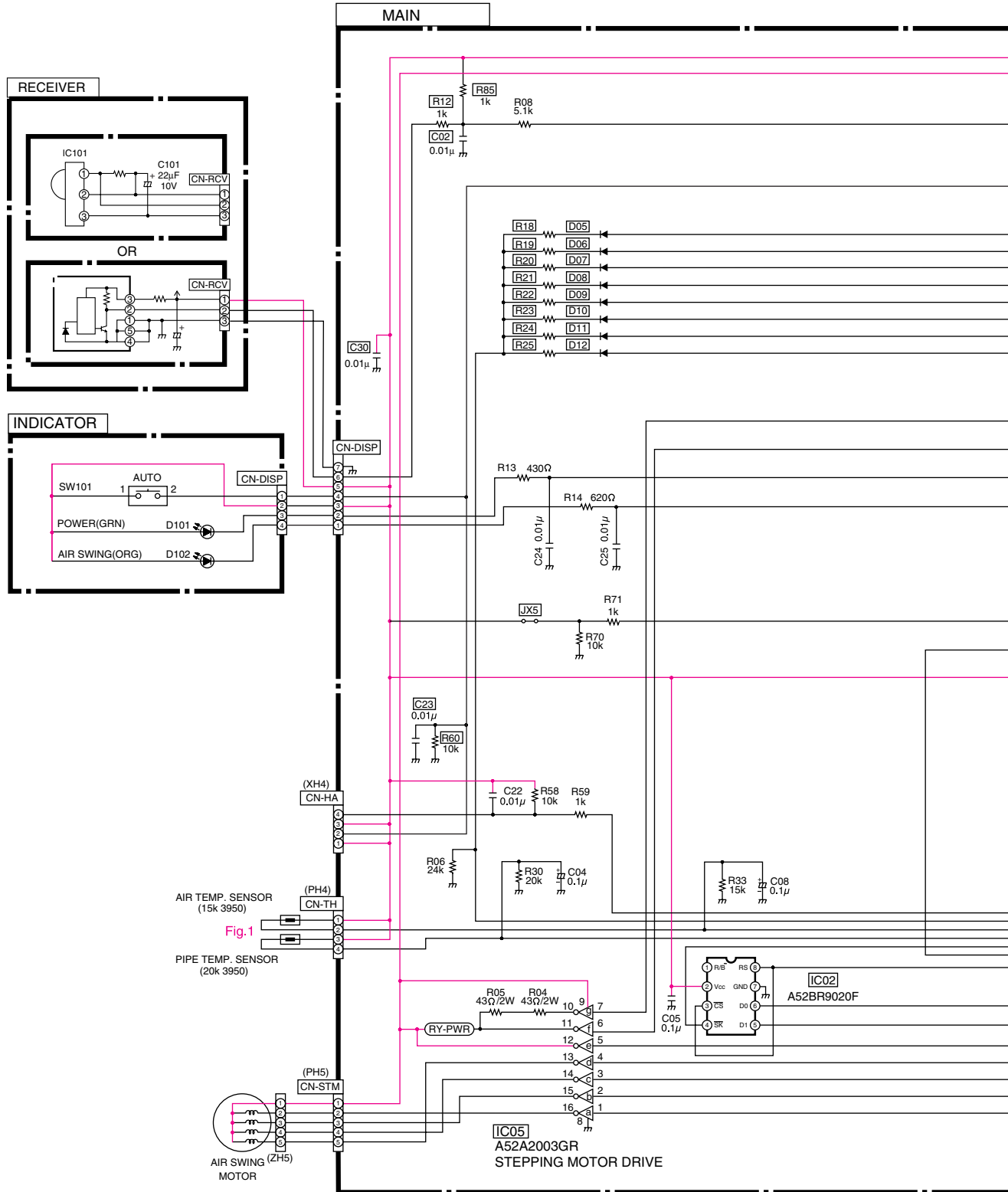
Packaging recyclable

Operational Condition

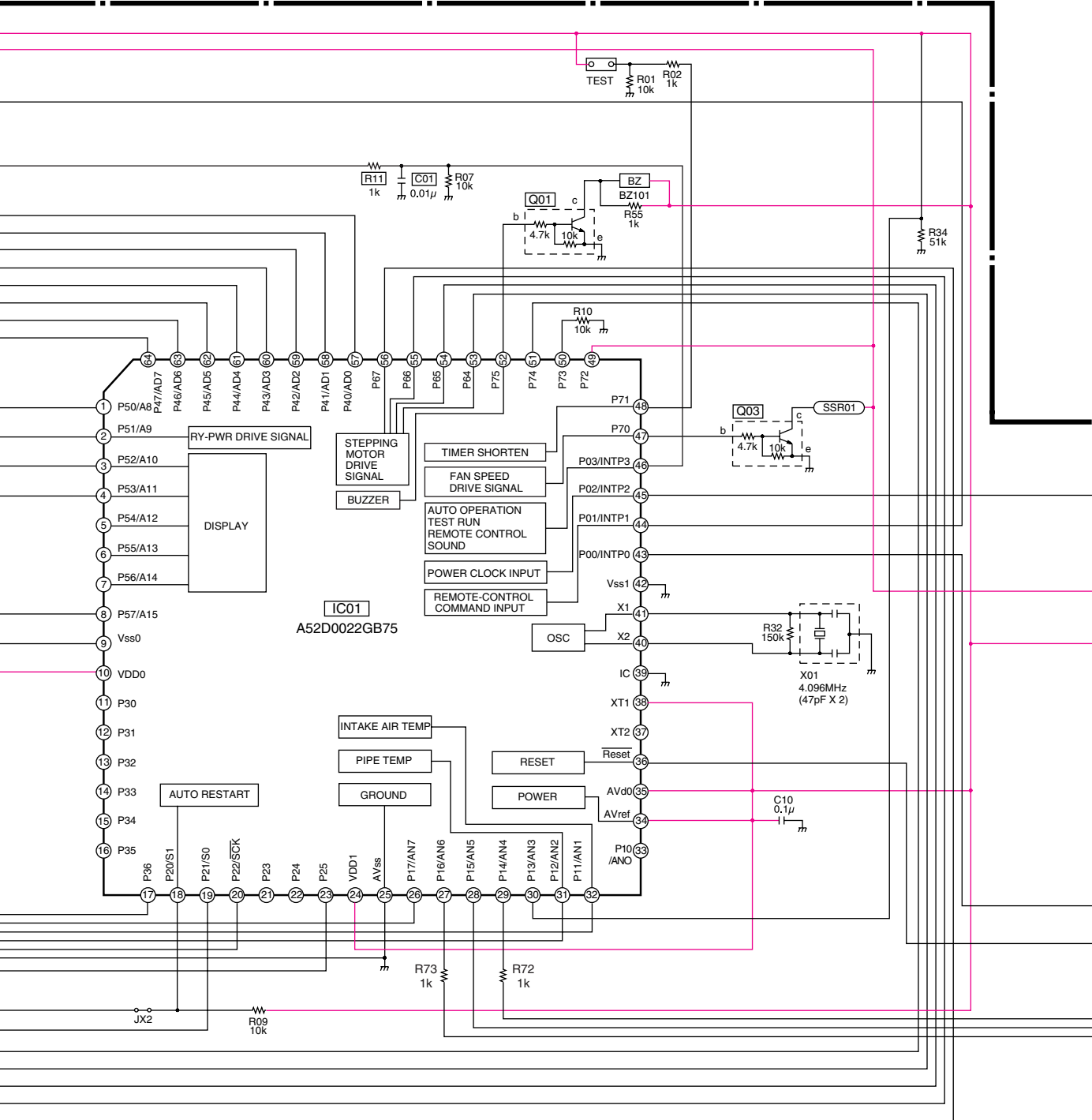
	Wet Bulb		Temperature	Dry Bulb	
	min	max		min	max
Indoor [°C]	11	23		16	32
Outdoor [°C]	11	16		16	43

- CS-PC9CK / CU-PC9CK
- CS-PC12CK / CU-PC12CK

SCHEMATIC DIAGRAM 1/3



SCHEMATIC DIAGRAM 2/3



SCHEMATIC DIAGRAM 3/3

